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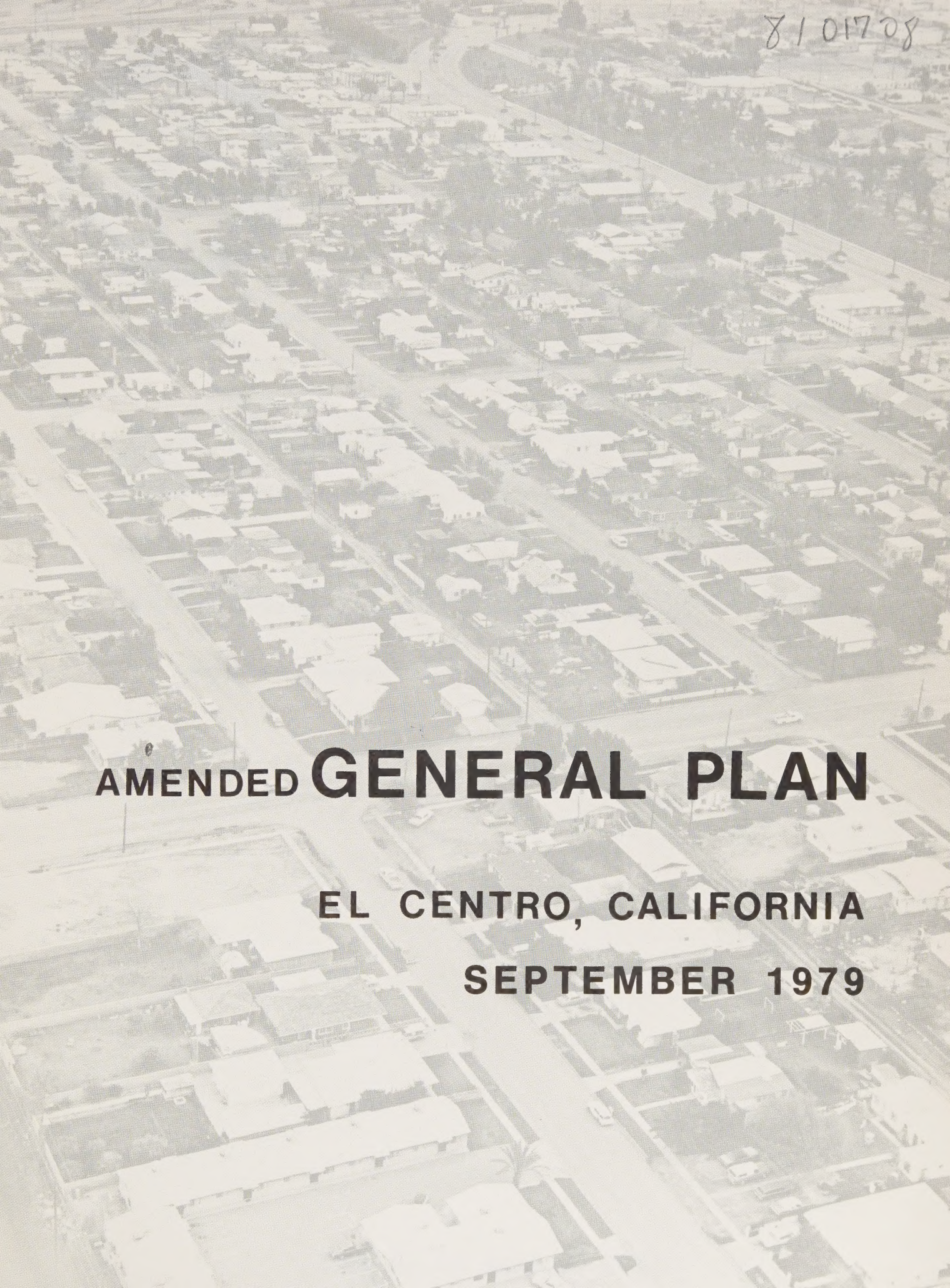
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AMENDED GENERAL PLAN

EL CENTRO, CALIFORNIA

SEPTEMBER 1979

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AMENDED GENERAL PLAN

EL CENTRO, CALIFORNIA

SEPTEMBER 1979


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CITY OF EL CENTRO CALIFORNIA

Rita Noden
CITY CLERK

P. O. BIN 1701
EL CENTRO, CA 92244
(714) 352-0211

June 2, 1981

Institute of Government Studies
University of California, Berkeley
109 Moses Hall
Berkeley, California 94720

To Whom It May Concern:

Enclosed please find copy of the General Plan for the City of El Centro which was adopted September 1979, and was recently printed.

This is pursuant to Government Code 50110.

Sincerely,

Rita Noden

Rita Noden, City Clerk

1063 GAYLEY AVENUE LOS ANGELES CALIFORNIA
90024

URBAN INNOVATIONS GROUP
AREA CODE (213) 477-9595

July, 1978

Mayor
City Council
Planning Commission
People of the City of El Centro

Gentlepersons:

We are submitting herein and in a separate report, the Amended General Plan for the City of El Centro. The work contained in these reports is the culmination of over a year of close and harmonious relationships with the staff, the Commission and the City Council. We have also reviewed our proposals, as they affect the area of influence, with members of the County Planning Staff and we have obtained their advice and counsel. In addition, there have been numerous open meetings of the Planning Commission where portions of the proposals have been presented and discussed.

The report on the Central Business District, which is an element of this General Plan, is, as indicated, being presented under separate cover. This study went into far greater detail than was indicated for a General Plan, but the interest and enthusiasm of the project manager and his associate dictated the ultimate product.

In addition to the General Plan amendments, the consultants have also submitted recommendations for bringing the zoning map and ordinance into a consistent pattern with the General Plan Amendments. It should be noted that the changes within the city are not major, but suggestions for the area of influence dictated new ordinance sections to deal with the conditions in that area.

Mr. Frank Klett and I have enjoyed our relationships with the people of the community. We hope that the recommendations have a beneficial impact on the development of the community in an economically sound and socially responsible manner.

Respectfully submitted,

Simon Eisner

Simon Eisner, A.I.P., Consultant
Frank Klett, Project Manager

This General Plan contains ten elements of which the first six have been amended and the last four have remained unchanged since their adoption in 1973. The revisions recommended by the Planning Commission on 2/20/79, 3/20/79, and 4/17/79 and by the City Council on 9/5/79 are also included.

CITY OF EL CENTRO - 1979

Planning Commission

Ed Snively, Chairperson
James Ellis
Ernest M. Felix
George Harris
Don A. Twogood
Wilbur Welsh

City Council

Roy Perry, Mayor
Dale Gares, Mayor Pro-tem
Henry Alarcon
Iris DeZarn
Fred Escalera

City Clerk

Celia Sweeden

City Treasurer

Dorothy Ehmke

City Attorney

James Darrow

Fire Department

Tom Garner, Chief

Police Department

Marcel Jojola, Acting Chief

City Administration

George Parker, City Manager
Lou Herz, Assistant City Manager

City Planning Department

Oliver Alvarado, Director
Alex Hinds, Associate Planner

Department of Public Works

Darryl M. Avrit, Director

Engineering Department

Angel Espiritu, City Engineer

Chamber of Commerce

James Barr , President

Building and Housing Department

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STATE OF CALIFORNIA)
COUNTY OF IMPERIAL)SS.
CITY OF EL CENTRO)

I, CELIA SWEEDEN, CITY CLERK OF THE CITY OF EL CENTRO, CALIFORNIA, DO HEREBY CERTIFY THAT THE AMENDED GENERAL PLAN WAS ADOPTED BY THE CITY COUNCIL OF THE CITY OF EL CENTRO BY RESOLUTION NO. 79 - 103 ON SEPTEMBER 5, 1979 BY THE FOLLOWING VOTE:

AYES: Councilmen DeZarn, Alarcon, Escalera, Gares, Perry
NOES: None
ABSENT:None

Celia Sweeden

CELIA SWEEDEN, CITY CLERK
CITY OF EL CENTRO, CALIFORNIA

(SEAL)

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INTRODUCTION

A HISTORIC SKETCH

In 1906 W.F. Holt and C.A. Barker purchased the land on which El Centro was eventually built for about forty dollars an acre and invested $100,000 in improvements. As one historian of Valley life put it, "...in only five months El Centro went from a barley field to a city..." The City of El Centro was incorporated on April 6, 1908.

Early growth was rapid with the city's population reaching 1,610 by 1910 and more than tripling by 1920 to 5,646 people. One of the reasons for this rapid early growth was El Centro's successful battle with the City of Imperial to become the county seat. In these early days, relationships among the cities of the Imperial Valley were often intensely competitive, reflecting the particular frontier character of the area and the fact that six cities within a twenty mile radius were all established within one generation. These cities were in a horse race to win the prize of being the Valley's leading city and the intense competition is measured by the fact that it took twenty years to get a county fair started because of strong local loyalities on the County Board of Supervisors.

By the mid-forties, El Centro had become the second largest city in the Imperial Valley, with a population of about 11,000 people. El Centro had also become the principal wholesale center of the area and the location of the Imperial Irrigation District (IID) administrative offices.

Because of its strategic location near rail lines and Highways 80 and 99, El Centro in the 1940's was also becoming the shipping center

FIGURE 1


RIVERSIDE COUNTY
SALTON SEA
SAN DIEGO COUNTY
CALIPATRIA
WESTMORELAND
BRAWLEY
IMPERIAL
HOLTVILLE
EL CENTRO
CALEXICO
MEXICO
SAND HILLS
FISH CREEK MOUNTAIN
SUPERSTITION MOUNTAIN
MESA
U.S. NAVAL AUX. AIR STATION
PILOT KNOB
CARGO MUCHACHO MTS
ARIZONA
IMPERIAL COUNTY
DECEMBER 1977
POPULATION
20,000
5,000

for vegetables in the south end of the Valley. The principal industries of El Centro in the forties revolved around agriculture--fruit and vegetable packing and shipping, ice plants, a flax fiber plant, box factories, and concrete pipe and brick yards.

By the 1970's, agriculture was still an important part of the city's economic life. Imperial County has become one of the most agriculturally productive areas in the country and more than thirty-five growers and shippers still operate in El Centro. However, by the early 1970's the two largest employment sectors in the El Centro labor market area were Government and Wholesale/Retail Trade, reflecting El Centro's emerging role as a regional administrative and commercial center.

Present Population and Employment

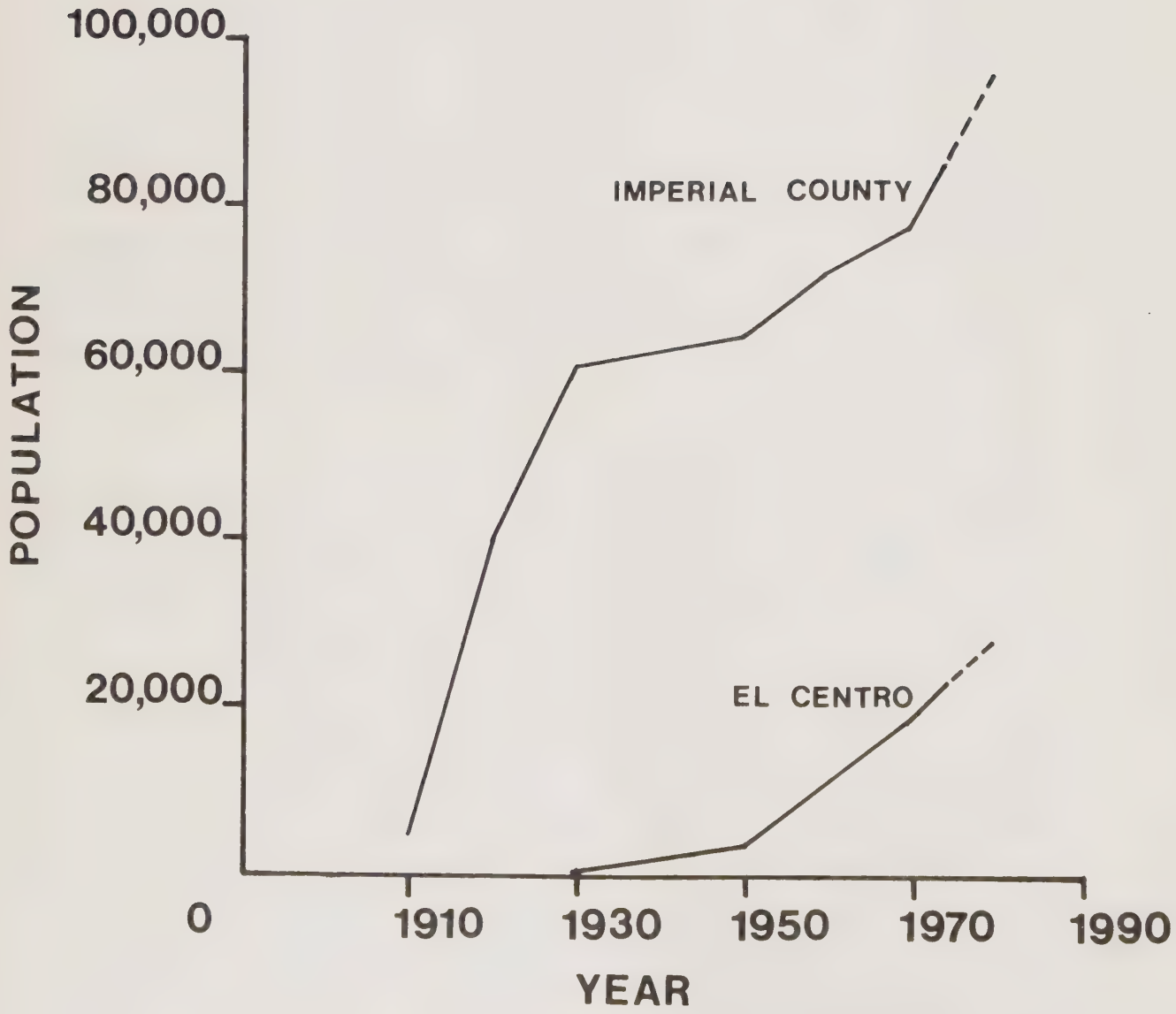
Preliminary results from a 1977 special census indicate El Centro's current population is 22,660, up 3,388 from the 1970 Census figure of 19,272, an average growth rate of approximately 2% per year.

Shown in Figure 2 are population figures for both El Centro and Imperial County for the last several decades. This figure reveals a number of things. For example, the population of the county as a whole has remained fairly constant during the 1960-70 time period. During this same period El Centro experienced continued growth, reflecting a pattern of migration within the county from rural to urban areas plus in-migration from outside the county.

Figure 1 also indicates a sharp upturn in county population from 1970 to 1975, as revealed by a census conducted by the California State

FIGURE 2

POPULATION GROWTH



SOURCE: U.S. CENSUS & DEPARTMENT OF FINANCE

Department of Finance. One explanation of this upturn is that county out-migration rates, historically high, have dropped recently (perhaps because a general statewide unemployment problem). Furthermore, a substantial in-migration has occurred recently and for a number of years in the past. For example, 1970 Census figures indicate that about 14% of the county's population had moved into the county during the period 1965-70. These two factors -- declining out-migration and continued in-migration -- account for about 37% of county's population growth during the 1970-76 time period. (The remainder is due to "natural increase" -- i.e. births minus deaths.)

El Centro has attracted a large proportion of the people moving into the county. In 1970, approximately 23% of the residents of El Centro reported moving there from outside the county during the 1965-70 time period, compared to 14% for the county as a whole.

El Centro has also been the destination for much of the rural/urban migration within the county and has experienced substantial migration within its own borders. In 1970, about 56% of the households of El Centro reported living in a different house than the one they had lived in five years previously, even though they had been county residents at the time. In other words, more than half the city's households had recently moved either from somewhere in the county to El Centro or had moved from one place in El Centro to another.

At the present time, major population moves to and within El Centro are continuing. For example, very rough estimates based on recent Planning Department statistics indicate that the "demand" for new single

family residences can be allocated as follows: 50% due to in-migration from outside the city; 50% due to changes within the city.

Partially due to the relative size of recent population movements, El Centro differs significantly from the county as a whole on a number of socio-economic characteristics. For example, 1970 Census figures indicate that among the six major cities in Imperial County, the City of El Centro ranks highest on such socio-economic characteristics as in-migration, percentage of white collar employment, median family income, educational attainment, median age, and Mexican American (M.A.) family income. El Centro is ranked low (often last) in terms of such characteristics as household size, fertility rates, non-worker/worker ratio, and the incidence of poverty.

For the County as a whole, the major economic activities, in terms of percent of total employment, are: agriculture (39.5%); government (24.8%); retail trade (16.6%); and services (9.0%). Manufacturing is a relatively unimportant sector in the county economy, providing only about 6.5% of the jobs in the county. However, the manufacturing sector experienced the highest rate of growth during the period 1970-77, as indicated in Table 1 .

The pattern of employment in the El Centro area is somewhat different than for the county as a whole. Employment in such activities as government, wholesale and retail trade, finance/real estate, services, transportation/communication/utilities is concentrated somewhat, as reflected in the fact that half or more of the jobs in those sectors are in the El Centro area, even though this area contains only about one quarter of the county's population.

TABLE 1

County Employment

	1975	1976	Forecast 1977	Forecast 1978	Approx. % change 1970-77
Wage and Salary Employment	36,250	38,250	39,200	39,950	
Agricultural Employment	14,250	15,100	15,500	15,800	
Nonagricultural Employment	22,000	23,150	23,700	24,150	30.8
Mining	0	50	50	50	
Construction	700	750	800	850	40.9
Manufacturing	2,000	2,050	2,200	2,300	51.7
Nondurable	1,500	1,550	1,700	1,750	
Food and Kindred	800	750	800	800	
Other	700	800	900	950	
Durable	500	500	500	500	
Stone, Clay, Glass	300	300	300	300	
Other	200	200	200	250	
Transportation and Public Utilities	1,350	1,400	1,450	1,450	35.7
Wholesale Trade	1,350	1,550	1,600	1,650	25.0
Retail Trade	5,000	5,500	5,400	5,500	25.0
Finance, Insurance, and Real Estate	650	650	700	700	35.0
Services	3,050	3,150	3,250	3,350	34.0
Government	7,900	8,050	8,250	8,300	28.3

Source: California Employment Development Department, Annual Planning Report, Imperial County, 1977-78

Generally, workers living in El Centro are more likely to be employed in higher skilled, higher paid occupations than workers in the county as a whole.

COMMUNITY GOALS

Arriving at a set of community goals is a difficult if not a heroic task. When goals are ones with which everyone can agree, they are often so general as to be less than helpful in making planning decisions, while goals specified in detail can lead to conflicts over interpretation and intent. Invariably, there are conflicts among people holding different interests, ownerships, values and perspectives.

Even if goals can be agreed upon, some may be in conflict with others -- in sum, "this" may only be gained at the expense of "that." In order to develop a good plan, not only do goals have to be identified but also some sense of their priority, their relative importance, their value must be known if conflicts among goals are to be resolved.

A variety of informal and formal techniques have been developed to help identify and to weight community goals. Public meetings, opinion polls, discussions with community leaders, can all contribute to an understanding of what a community wants, as expressed by participants. But still a choice has to be made among the variety of goals expressed by a diverse citizenry.

Most often, it is the Planning Commission or the elected official who is called upon to identify and to prioritize community goals. It is the elected official who is ultimately responsible to the people of the community and who makes the day-to-day decisions and choices directed toward meeting community goals. Other voices, other individuals, other organizations are listened to and serve as a kind of cross-check on the official's impressions and statements. However, the elected official's determination of community goals should be a summing up

of what they perceive the community as a whole desires.

The El Centro City Council, after consulting the Planning Commission, public debate and internal dicussion, has adopted the following general goals and objectives to be addressed in the General Plan:

* Provide for anticipated population growth and economic development due to geothermal energy exploitation, increased tourism, retail trade, and other factors

* Provide a program that enhances El Centro's attractiveness as a place to live, to work, to visit, and to conduct business

* Guide future development with the purpose of providing additional needed public facilities and services in an efficient, equitable, and cost-conscious manner

* Protect and preserve agricultural lands and other natural resources

* Protect existing residential areas and promote additional supplies of good-quality residential structures within the reach of a variety of people, economic groups, and lifestyles

* Foster the upgrading and continued growth of the civic and financial center

* Support the revitalization of established commercial areas, particularly the central business district

* Provide new areas for necessary future commercial development appropriate to the welfare and needs of the community.

These goals should not be looked upon as either complete or fixed for all times. The future is likely to reveal new potentials as well as new problems. These goals, as well as the General Plan, should be re-evaluated from time to time in order to ensure that they continue to be true reflections of current community needs, desires and potentials.

FUTURE GROWTH

THE FUTURE OF GEOTHERMAL DEVELOPMENT

When trying to estimate the impact of geothermal development on the City of El Centro and other communities in the Imperial Valley, a number of basic questions must first be answered. The most important of these are:

*To what extent will the geothermal resources of the valley be developed?

*Which geothermal areas will be developed and when?

*What changes in the local economy will be caused by geothermal development?

Currently, answers to the first two questions vary widely because of differing interpretations of the limited amount of data available. For example, a recent resource assessment of the valley estimated a potential of producing electric power ranging from 7,000 to 80,000 megawatts for thirty years. How much of this uncertain total will actually be developed must await detailed analysis of technical, economic, and environmental constraints.

Such constraints will, in part, also determine the pace and location of geothermal development. For example, it may not be, at present, economically and technically feasible to develop the Salton Sea field because of the supersalinity of its geothermal fluids. At least part of this field may not be developed for other reasons because it is an "amenity resource" in which county residents and visitors pursue a variety of recreational activities. A recent study concluded that the field around Niland had much greater amenity value and was more environmentally sensitive than any of the other known geothermal areas. In

sum, technical, economic, and environmental factors may combine to delay or halt the development of the Salton Sea fields, even though this area contains more than half of the potential geothermal resources of the valley.

Because of different perceptions of the severity of potential problems, expectations of the future pace of geothermal development vary widely. Shown in Figure 4 is a set of development scenarios proposed by a number of independent researchers. Projected total installed capacity by the year 2000 varies from a low of 600 megawatts to a high of 6000 megawatts.

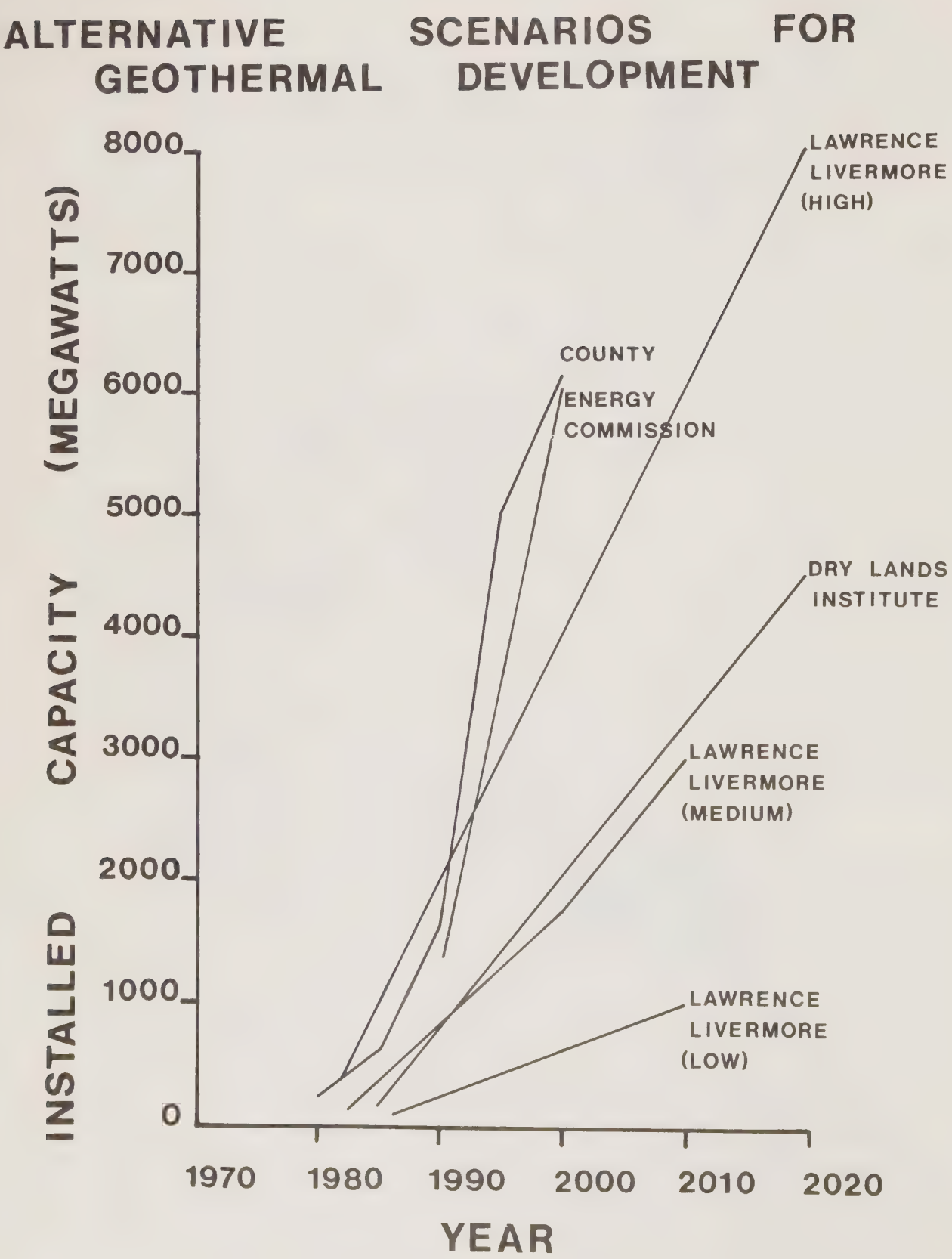
The pace of development will depend, in part, on the costs of geothermal electricity relative to the costs of electricity available from other types of power plants. While expected future increases in the costs of fossil and nuclear fuels are often cited as an argument for the assured growth of geothermal energy development, it should be noted that fuel costs are a relatively small part of the total delivered price of electricity, as indicated in Table 2.

While fuel prices for geothermal generating plants can be expected to be lower than for conventional fossil fuel plants, capital costs are likely to be roughly equal, and operating and maintenance costs may be higher. Estimates of total investment costs for geothermal electricity vary from about $500 per kilowatt, upward. Uncertainties about the character of individual reserviors and the technologies for handling the saline, low temperature fluids characteristic of the area have led some estimators to put the total cost in excess of $1000 per kilowatt.

FIGURE 3


RIVERSIDE COUNTY
SALTON SEA
SAN DIEGO COUNTY
CALIPATRIA
WESTMORELAND
BRAWLEY
FISH CREEK MOUNTAIN
SAND HILLS
IMPERIAL
U.S. NAVAL AUX. AIR STATION
HOLTVILLE
EL CENTRO
CALEXICO
CARGO MUCHACHO MTS.
KNOB
MESA
MEXICO
ARIZONA
IMPERIAL COUNTY
DECEMBER 1977
GEOTHERMAL RESOURCE AREAS

FIGURE 4


ALTERNATIVE SCENARIOS FOR GEOTHERMAL DEVELOPMENT
INSTALLED CAPACITY (MEGAWATTS)
8000
7000
6000
5000
4000
3000
2000
1000
0
1970
1980
1990
2000
2010
2020
YEAR
LAWRENCE LIVERMORE (HIGH)
COUNTY ENERGY COMMISSION
DRY LANDS INSTITUTE
LAWRENCE LIVERMORE (MEDIUM)
LAWRENCE LIVERMORE (LOW)

As indicated in Figure 5, such high costs may mean that geothermal development may not take place in the Imperial Valley unless the costs of alternative energy sources increase drastically.

At this time it is impossible to predict how much and where geothermal development will occur over the next twenty years. Yet, the potential impacts of such development could be enormous.

Shown on Tables 3 and 4 are estimates of the effects of the construction cycle and operation of a 200 megawatt geothermal plant. The effects of the construction period on the local economy would be relatively minor. Even if three plants were under construction in a given year, on average only about 250 permanent local jobs would be created, for example. However, the effects of ongoing plant operations would be much more substantial. A total of about 216 permanent jobs would be created by each plant. If installed capacity in the year 2000 was to reach 2,000 megawatts, about 2200 local permanent jobs would be created.

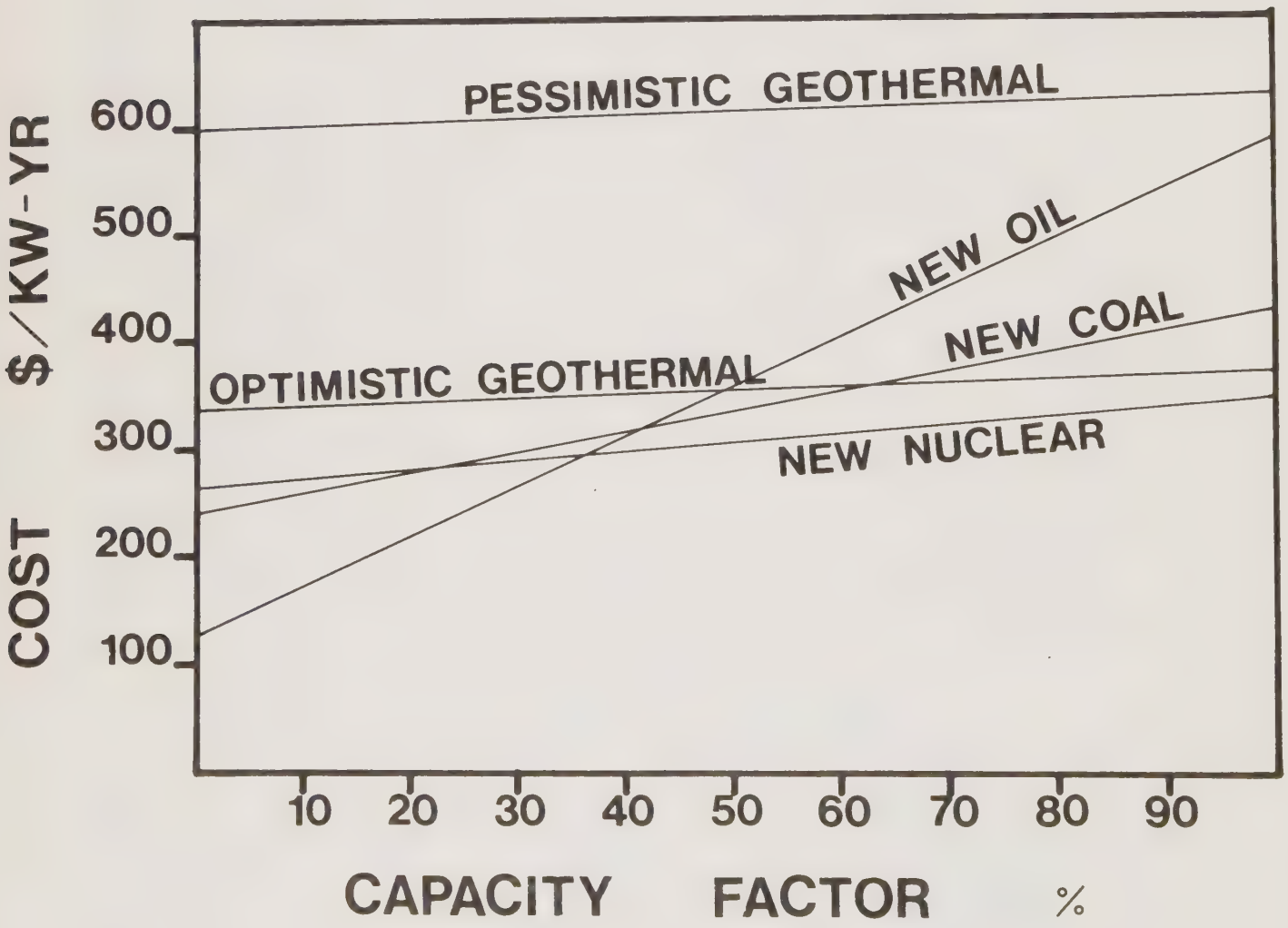
Table 2
Average Costs of U.S. Electricity: 1968

Function	Percent of Total	
Generation	50%	
Fixed charges (capital, depreciation, taxes, etc.)		24%
Fuel		16%
Operation and maintenance		10%
Transmission	13%	
Distribution	37%	
Total	100%	

Source: Federal Power Commission

FIGURE 5

COMPARISON OF GEOTHERMAL, COAL, AND NUCLEAR POWER PRODUCTION COSTS



SOURCE: DRY LANDS INSTITUTE

TABLE 3

Employment effects over the construction cycle
of a 200 MW flash steam power plant
and supporting well field

	YEAR							
	1	2	3	4	5	6	7	Total
EMPLOYMENT[c]								
Direct[d]	6	12	32	32	73	85	65	305
Indirect + Induced	2	5	15	15	9	12	8	66
Wage[a] + Tax relief[b]	4	8	29	28	34	50	61	214
TOTAL	12	25	76	75	116	147	134	585

a Spending by temporary residents only; spending by permanent residents included in induced effects
b Assumes all tax revenue from geothermal facilities represents
c Rounded to nearest man-year equivalent
d Includes permanent employment only

TABLE 4

Employment effects of the
operation of the geothermal sector

EMPLOYMENT

Direct	21
Direct + Indirect	118
Total Secondary	216

Definitions:

"Direct" -- full-time local employees of geothermal plants
"Indirect" -- employment stimulated on other sectors of local economy because of operation of geothermal plants
"Secondary or 'induced'" -- includes employment stimulated by increased consumer expenditures of new workers or of better paid old workers
"Tax relief" -- a special case of a secondary effect. A portion of property tax burden will be shifted to new geothermal plants so that workers will have more money to spend and will stimulate the local economy.

Source: Dry Lands Research Institute: University of California, Riverside (1977)

THE FUTURE OF RECREATION

Though the development of geothermal resources is often cited as a potential cause of growth within Imperial County, relatively little attention has been paid to the potential impacts of developing another important county resource, its recreational areas and opportunities. As shown in Figure 6, extensive desert, mountain, and water recreation areas are scattered throughout the county.

Shown in Table 5 are recent forecasts of statewide growth in several recreational activities by the year 1985. Similar trends are expected for Southern California.

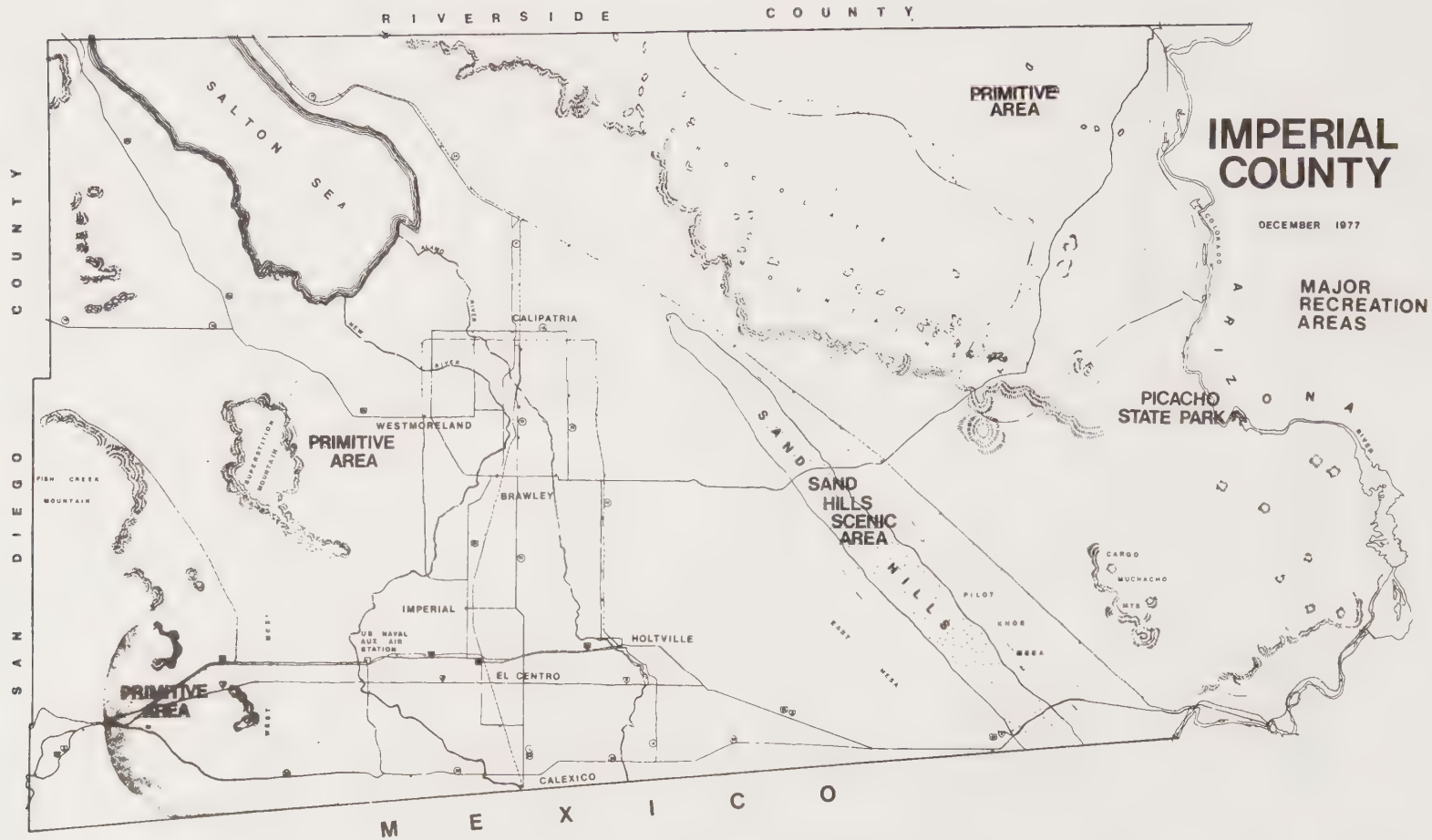
Table 5
California Statewide Growth in
Summer Recreation

Recreational Activity	Percent Increase by 1985
Swimming	+66%
Fishing	+62%
Boating	+74%
Sightseeing	+53%
Nature Walks	+49%
Camping	+76%
Hiking	+69%
Picnicking	+48%
Outdoor Sports	+59%
Bicycling	+31%
Horseback Riding	+46%
Auto Driving	+48%
Outdoor Plays and Concerts	+53%

Source: Bureau of Outdoor Recreation and Mammoth/UCLA Project (1972)

It is likely that Imperial County will experience the effects of a significant portion of this growth. The valley provides a variety of

FIGURE 6


RIVERSIDE COUNTY
SALTON SEA
PRIMITIVE AREA
IMPERIAL COUNTY
DECEMBER 1977
MAJOR RECREATION AREAS
CALIPATRIA
WESTMORELAND
PRIMITIVE AREA
PICACHO STATE PARK
ARIZONA
SAND HILLS SCENIC AREA
SAND HILLS
BRAWLEY
IMPERIAL
HOLTVILLE
EL CENTRO
CALEXICO
PRIMITIVE AREA
SAN DIEGO COUNTY
MEXICO

recreational opportunities, while the climate is such that many of these activities can be pursued year round rather than just in the summer months as in the cooler coastal urbanized areas.

Currently, as shown in Table 6, a large number of recreationalists already visit the Valley. More than 500,000 people visit the Salton Sea, Picacho State Recreation Area, Bureau of Land Management Lands, and the Colorado River each year. And the number of visitors may increase by between 50% and 75% within the next ten years if the Valley continues to receive the same share of recreationalists from coastal areas. However, it is likely that the Valley will receive a greater share of Southern California recreationalists in the future. For example, the proposed new highway linking Calexico with Indio will reduce the travel time between Los Angeles and the Valley. Furthermore, many of the recreational facilities around the highly urbanized coastal areas are already at capacity so that many people are likely to be willing to travel longer distances to less congested recreational facilities, assuming gasoline supplies remain available.

It is quite likely that the number of recreation visitors to the Valley will more than double over the next ten years, particularly if public agencies and private developers institute a recreation development program.

Visitors in other categories shown in Table 6 may also increase substantially. For example, the proposed north/south highway mean that the number of visitors passing through the County enroute to Baja will increase.

TABLE 6

Rough Figures-Estimates on Imperial County
Tourist-Visitor Traffic During Typical Year*

Salton Sea State Recreation Area (roughly 200,000 visitors a year, assuming roughly a third visit the portion in Imperial County)	65,000	
Picacho State Recreation Area	65,000	
Bureau of Land Management lands (including 150,000 for Imperial Dunes) Official BLM figures	317,000	
Hunters (dove, pheasant, waterfowl)	25,000	(est)
Tourists and visitors passing through on way to and from Mexico (50,000 persons per weekend for 8 months; 100,000 on five major holiday weekends INS estimates)	2,000,000	
Colorado River visitors (2,000 per weekend)	100,000	
Snowbirds, winter visitors from the East	10,000	(est)
Agriculture crews, farmworkers, cattle buyers, loaders, sellers, rodeo and exhibition personnel	5,000	
Visitors to Mexicali doctors (200 per week)	10,000	
ROUGH TOTAL	2,500,000	

* Figures compiled by Border Area Development Study from various official and unofficial estimates. They do not include the thousands of daily shoppers from Mexicali.

As yet, the great influx of visitors does not contribute significantly to the local economy. The majority of campers usually bring food and other camping needs and do not shop in local markets and stores. For the most part, there is a lack of tourist-oriented attractions needed to lure visitors and campers into the commercial establishments of the communities of the Valley.

However, the potential revenues that could be created through a large scale tourist industry are substantial. If Valley visitors, perhaps as many as 4,000,000 of them per year within the next ten years, could be induced to spend $10.00 each, the increase in retail sales would be $40,000,000 per year. Currently, total retail sales for food stores, restaurants and bars, service stations, general merchandise stores, and drug stores amount to about $273,000,000 per year.

Approximately 5,550 people are employed in all retail trade activities within the County and total retail sales amount to about $313,000,000 per year. An increase of retail sales by $40,000,000 could create, at a minimum, about 650 new jobs. Additional retail sales would also moderately stimulate other sectors of the economy so that a total of about 800 jobs could be created. By way of comparison, if the installed geothermal generating capacity was to reach 1,000 megawatts at the end of ten years (a very optimistic development time table), a total of about 1,500 local jobs would be created. However, such rapid paced geothermal development is unlikely: installed capacity (and the number of jobs created) may only be half the optimistic estimate.

In the medium term, the next ten years, the potential growth associated with recreational development could approach or exceed that which is associated with geothermal development.

POPULATION FORECASTS

The population of El Centro is currently growing at about 2% per year. Projecting steady growth at this rate to the year 2000 would yield a population of about 33,000 or an increase of roughly 50% over the next twenty-three years.

However, there are a number of unknown factors that make such a simple projection suspect. One such factor is the impact of geothermal energy development in the Imperial Valley. Such development may bring an influx of new people, particularly if the prospect of an assured energy supply also attracts new industry not directly related to geothermal development. New jobs may mean new people, or alternatively, mean that fewer people move out of the county in search of work elsewhere.

Another factor to be pondered is the recent national trend of population movement to the South, Southwest, and Rocky Mountain regions. Even without a substantial increase in employment opportunities due to further industrialization, the Imperial Valley may attract migrants from the North and East in search of warmer climates. The Imperial Valley may also develop a substantial tourist industry in the future. It was estimated recently that between 2,000,000 and 2,500,000 visitors and tourists enter Imperial County each year -- usually on their way to somewhere else -- potentially offering a vast market for a variety of goods and services and the prospect of many new jobs.

Furthermore, there has also been a steady national trend toward locating new industrial plants in rural areas rather than in urban or suburban areas. These factors together may insure continued population growth for the county even if large scale geothermal energy development does not take place.

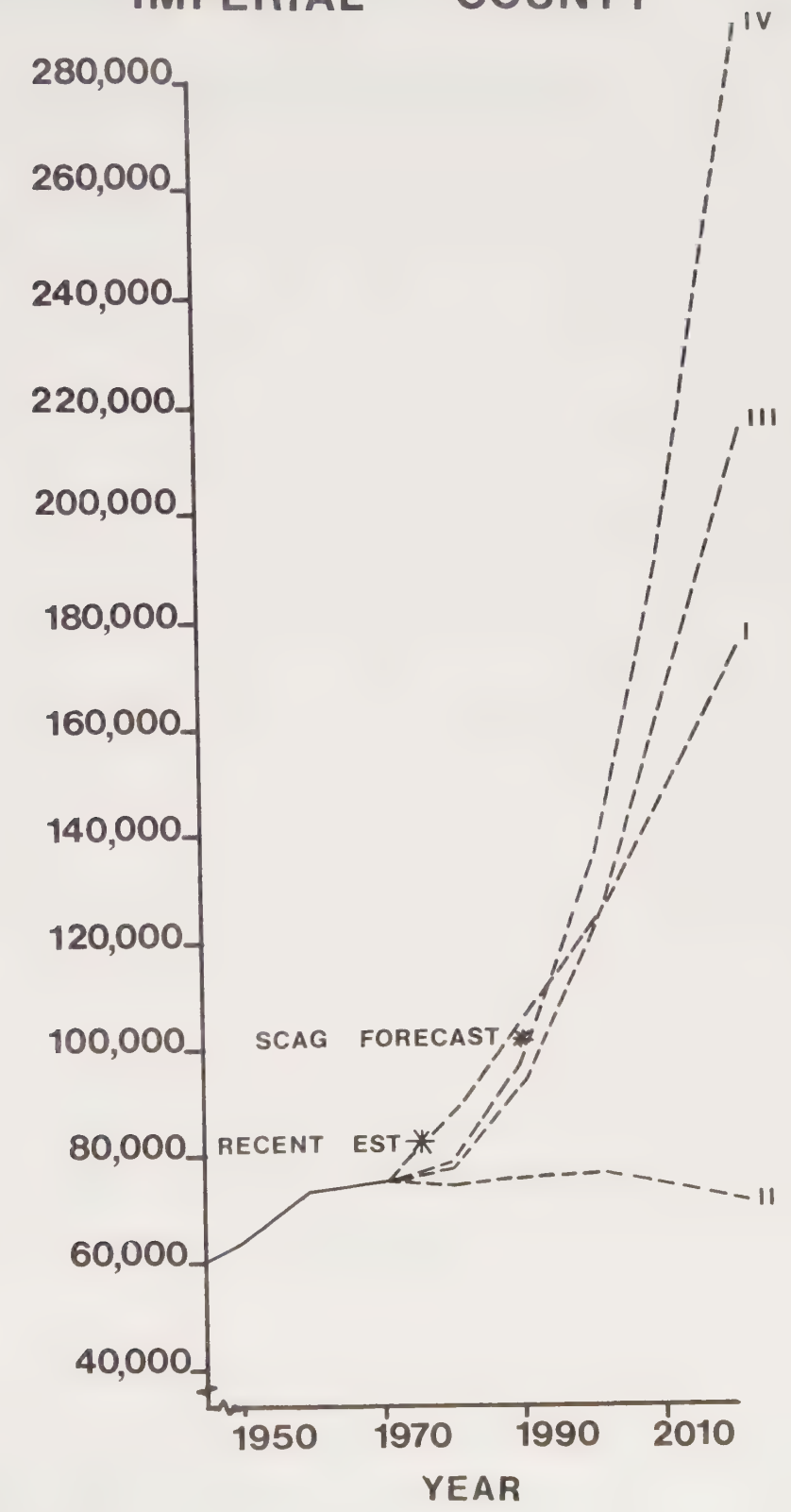
Another consideration is the closeness of the Mexican border and the recent rapid population growth of Northern Baja. Future changes in border-crossing legalities could swell the size of an already substantial population of Mexican-Americans and, conceivably, increase the already high average birth rate for the county. On the other hand, new employment opportunities in the Valley due to geothermal development or other sources could, in part, be filled by "commuter" labor from Northern Baja rather than permanent migrants from other areas.

A recent study of the potential impacts of geothermal development in Imperial County made some estimates of future population growth for the County on the basis of a number of assumptions about birth, death and migration rates, age distribution, and geothermal development timetables. These projections were not made on the basis of a specific scenario for geothermal development and resulting employment opportunities but rather on a set of estimates of how fast growth might occur from observations made in the fastest growing counties of California.

The results of this study, using 1970 as the base year, are shown in Figure 7. While projected populations at the end of the fifty year projection period varied widely, it is important to note that three of the

FIGURE 7

POPULATION FORECASTS FOR IMPERIAL COUNTY



SOURCE: DRY LANDS INSTITUTE

projections fall quite closely together up until about the year 2000 the three estimates were all within 6% or less of the mid-point value of 127,230. This figure then is a reasonable choice for the county's population in the year 2000 if major growth does occur.

If no major growth does occur and population growth follows historic trends, the population of Imperial County in the year 2000 is expected to be 129,000.

Population Projections for El Centro

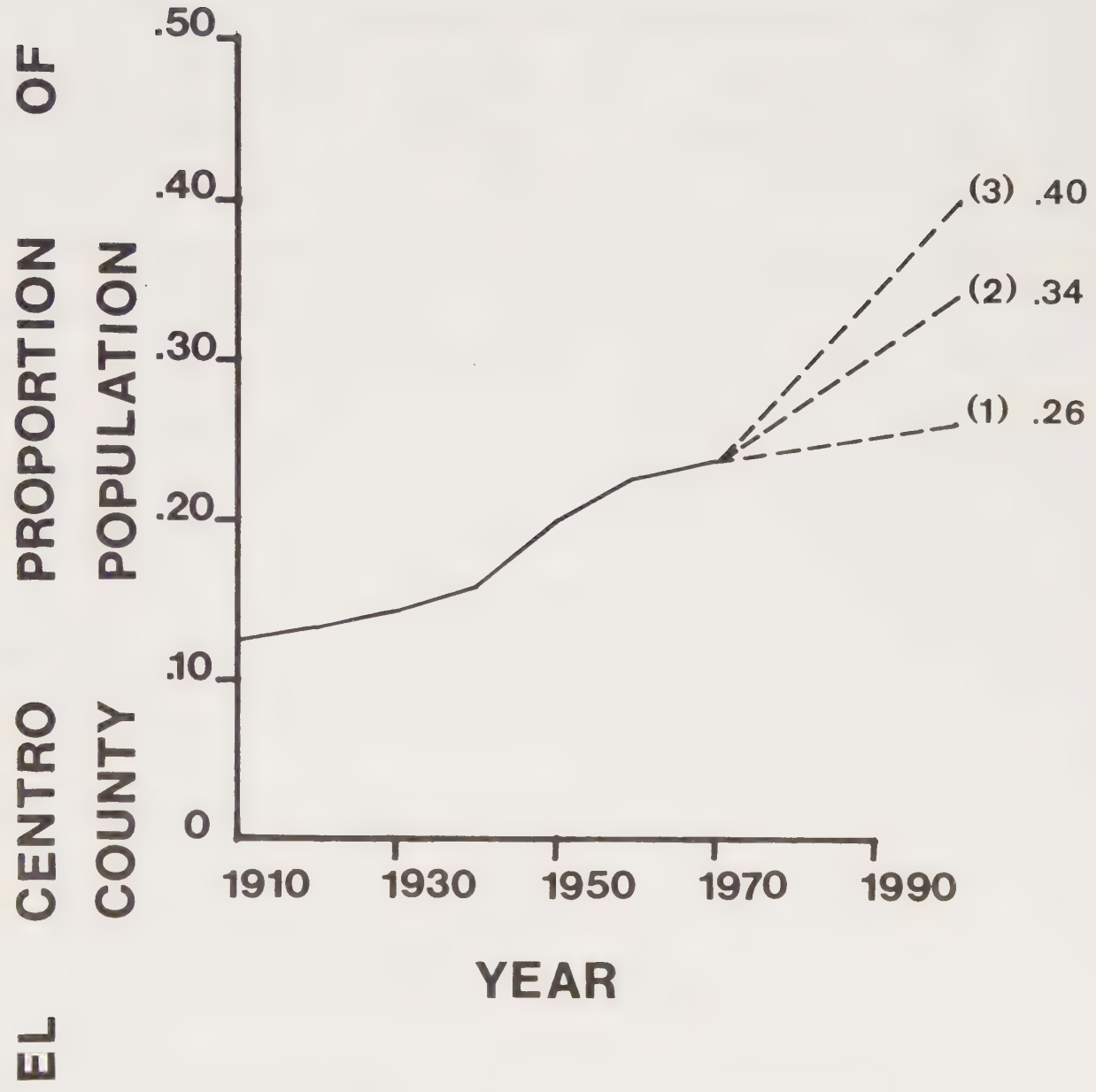
Projecting the future population for El Centro is even more problematical than for the County as a whole. As mentioned, El Centro continued to grow even while there was no great increase in the county's population. Conversely, the population of El Centro could stabilize even if the county does experience strong growth. In sum, El Centro could increase, maintain, or decrease its "share" of county population. In other words, El Centro is but one of a system of competing cities, a description reminiscent of the early days of the Valley.

As shown in Figure 8, the proportion of Imperial County residents living in El Centro has increased steadily, going from about 12% in 1910 to about 26% in 1970. Simply extending this rate of growth forward would imply that by the year 2000, about 33% of the population of the county will be living in El Centro.

However, there are several reasons for expecting that El Centro's share of county population may be significantly higher (or lower) than suggested by historic trends alone. For example, an analysis of population figures for California counties revealed that the "dominance" of

FIGURE 8

EL CENTRO SHARE OF COUNTY POPULATION



SOURCE: UIG PROJECT
(1910-70 CALCULATED FROM U.S. CENSUS)

county seats, in terms of population share, varies widely. The percentage of county population residing in county seats varied between about 6% and 50%. However, for counties with more than 150,000 people, the range is much narrower or between 20% and 40%.

Shown in Table 7 are county seat/county population ratios for several California counties that are most likely to be representative of El Centro's current and future situation -- county seats in counties with substantial agricultural production, moderate growth rates, a predominantly "inland" location, and without a "national headquarters" city or urban area. Even for these selected counties, the ratio of county seat population to total county population varies widely, ranging from .224 to .397 with ratio for El Centro/Imperial County being roughly at mid-range. However, these figures do suggest three distinct scenarios for El Centro's future role in Imperial County.

Scenario 1: El Centro maintains (but does not increase) its share of county population, implying uniform population growth for the entire county. (Share ratio = .260 in the year 2000.)

Scenario 2: El Centro increases its share of county population at a rate projected from historic trends. (Share ratio = .330.)

Scenario 3: El Centro increase its share of county population at a rate faster than historic trends, reaching by the year 2000 a share comparable to the present share of Fresno and San Joaquin county seats. (Share ratio = .400.)

On the basis of these scenarios and the projections of county population discussed previously, a series of estimates for the population of El Centro in the year 2000 can be calculated as shown in Table 8.

TABLE 7

County Seat Share of County Population

County	County Pop. (1976)	County Seat Pop. (1976)	Ratio
Fresno	448,600	177,900	.397
Kern	346,400	77,700	.224
San Joaquin	300,300	118,500	.395
Monterey	268,600	69,900	.260
Imperial	83,800	21,150	.252

Source: Population estimates from California Statistical Abstract, pp. 9-12

Table 8
Population Growth Scenarios

County Growth	County Population in the year 2000	El Centro Share (Scenario No.)	El Centro Population in the year 2000*
"High"	129,000	.260 (1)	34,000
		.330 (2)	43,000
		.400 (3)	52,000
"No" or "Slow"	90,000	.260 (1)	23,000
		.330 (2)	30,000
		.400 (3)	36,000

*Note: Calculated populations are rounded to the nearest thousand

For planning purposes, these calculations can be summarized into four scenarios for El Centro's future growth to the year 2000 as follows:

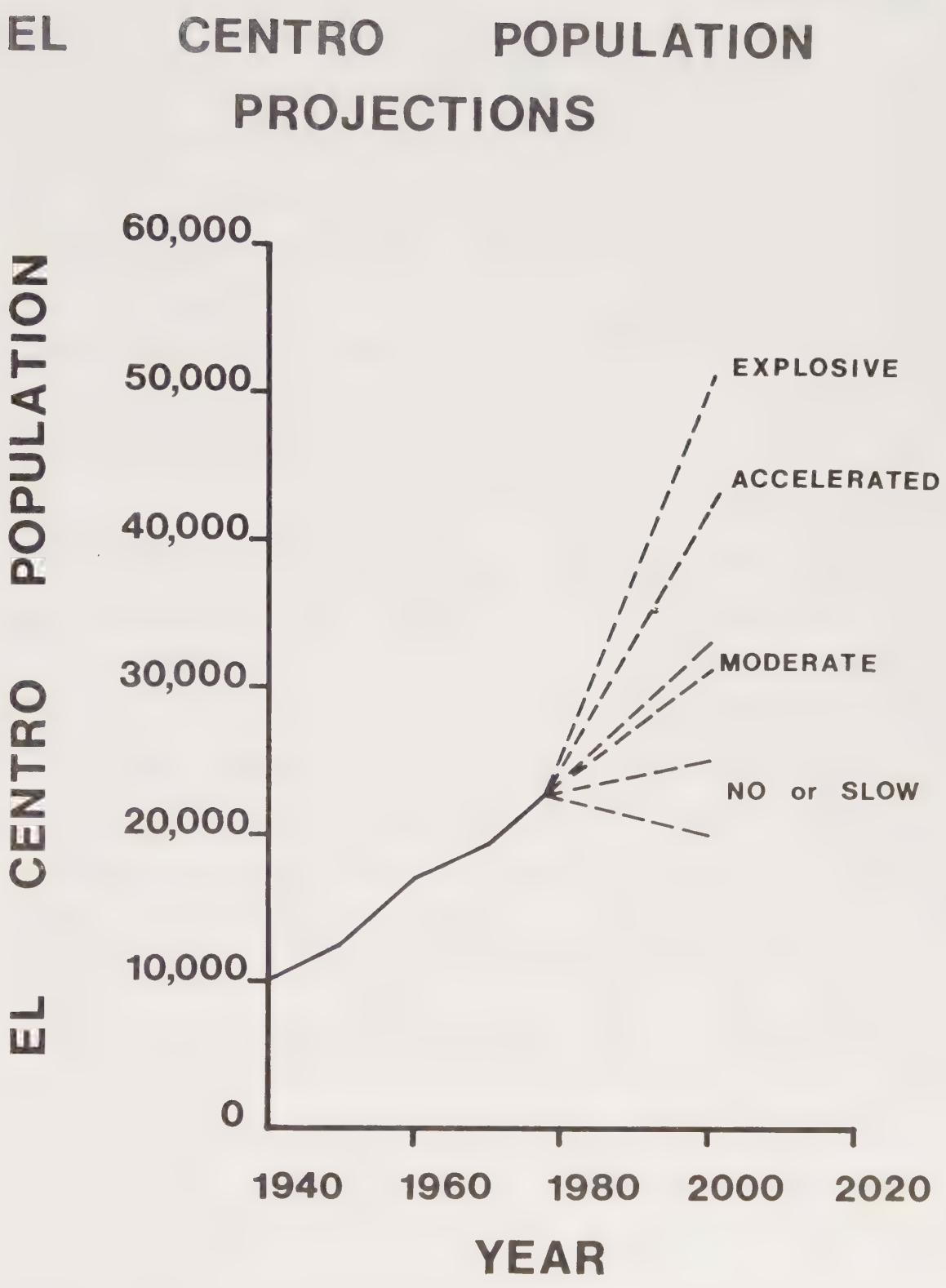
"No" or "Slow" Growth: The city's population will grow, at most, by only a few thousand people. Average yearly growth rates will be close to zero.

"Moderate" Growth: The city's population will increase by approximately 10,000 people, or roughly 50%, over the next 23 years. The growth rate will closely approximate historic trends of about 2% per year.

"Accelerated" Growth: The city's population will increase by approximately 20,000 people, or roughly 90%, over the next 23 years. The average yearly growth rate will be about 3.8% or approximately twice the historic rate.

"Explosive" Growth: The city's population will increase by almost 30,000 people, or more than double, over the next 23 years. The average yearly growth rate will be about 5.5% or almost three times the historic rate.

FIGURE 9



SOURCE: U.S. CENSUS & UIG PROJECT

GROWTH MANAGEMENT

A central concern in plans for accommodating future population growth is where new residential development should take place, given the necessity of providing necessary public services. While the costs of additional roads, sewer collector lines, and water lines will be borne in large part by developers (and passed on to new home buyers), there are other continuing services which must be provided by local governmental units and paid for by local tax revenues. These latter services include police and fire protection, school busing, street maintenance, water and sewer systems maintenance, waste collection and disposal, and other maintenance activities.

The dispersal of residential subdivisions from the existing urbanized area will increase the cost of some of these services to a greater extent than new development adjacent to the existing urban area. Increased costs will have to be absorbed by everyone in the community.

For example, as seen in Table 9, current expenditures for such necessary services as police and fire protection, water and wastewater systems operation and maintenance, street maintenance, and waste collection amount to a substantial portion of General Fund expenditures. The costs of police protection, waste collection, and street maintenance alone amount to about 37% of General Fund expenditures. The per capita costs of these services are particularly sensitive to the density of the residential developments to be served so that an overly dispersed pattern of development could have a substantial impact on municipal finances and local tax rates.

Table 9

Summary of El Centro General Fund Expenditures: 1977

Department		Budgeted Dollars	Percent of Total
Police Department		$1,097,852.00	21.2%
Fire Department		$ 746,369.00	14.4%
Public Works Department		$2,064,090.00	39.9%
Street Maintenance	$456,090.00		8.8%
Water System Main.	$286,806.00		5.5%
Sewer System Main.	$ 51,470.00		1.0%
Waste Collection/Disp.	$385,700.00		7.4%
Water Treatment Plant	$360,884.00		7.0%
Wastewater Treat. Plant	$222,137.00		4.3%
Other**	$301,003.00***		5.8%
Parks Department		$ 317,905.00	6.1%
Recreation Department		$ 196,050.00	3.9%
Other****		$ 755,739.00	14.6%
Total		$5,178,005.00	100.0%

Source: City of El Centro Financial Report, June 30, 1977

* Rounded, may not add to 100.0%

** Contractual services

*** Administration, engineering, operations and maintenance, shop and corporate yard

**** Includes non-departmental ($162,893.00), Finance Department ($161,196.00) City Manager ($93,734.00), Maintenance of City Hall ($50,270.00), etc.

LAND USE



The land use element provides basic data on land characteristics and the various activities occupying individual pieces of land. These data are used in analyzing the current pattern of land use and serve as one of the underpinnings for formulating the long-range land use plan. The land use plan, through its effects on public and private decisions and investments, can be a powerful influence on the growth rate, economy, character, quality, and pattern of the city's physical environment.

The land use plan proposes a set of policies intended to encourage the upgrading and preservation of the existing city and to provide for an orderly, efficient, and logical extension of urban development in the predominantly undeveloped area surrounding the city.

A central issue in deciding upon the future pattern of development is the manner in which future growth is to be accommodated. Already developed areas can be used more intensively (higher average densities) or undeveloped land can be brought into use. A range of choices exists between these two extremes.

Until recently, many cities have emphasized expansion into new areas rather than the recycling and more intense use of existing areas. However, over the years, experience and analysis have brought about a general acceptance that such an approach to accommodating growth can be expensive in providing services and facilities and add to the severity of a number of environmental, social, and economic problems.

Many cities are now attempting to define a "balanced" program of expansion and increased utilization. In large measure, the proper balance

is unique to each individual community, being determined by the nature and relative importance of community goals.

Another important factor affecting the community's choice is the existing pattern of development. The face of the city changes very slowly and some choices may be only feasible in the long run. For example, an already intensely developed city may have little choice but to expand into new areas. Alternatively, a city "land locked" by development can only accommodate growth internally.

This land use element is divided into five parts. The first part identifies objectives and principles pertaining to residential, commercial, and industrial uses of land and enumerates existing standards for such uses.

The second part focuses on the nature and pattern of development within the existing city boundaries. Descriptive data in this section provides the basis for answering, in part, questions as to what changes in the pattern of land uses are needed and how much growth could be accommodated within the existing area of urban development.

The third part looks in detail at the area of predominantly undeveloped land surrounding the city, the city's "area of influence." Existing uses of land are identified and factors affecting the land's suitability for future development are discussed. Standards for new development are proposed.

The fourth part brings together the analysis and results of the preceding sections and proposes a coordinated, comprehensive land use plan for both the city and its area of influence. This plan is an important element in efforts to "manage" growth and is based upon current

expectations of future growth, the existing pattern of development, and community desires as to how growth should and can, physically and financially, be accommodated.

The fifth part of the land use element explores and identifies tools that could be used to implement the proposed plan.

SECTION I

OBJECTIVES AND PRINCIPLES

Very general land uses are identified in the General Plan representing predominant patterns within somewhat flexible boundaries. Residential areas, commercial areas, and industrial areas are designated on the basis of community needs and goals for the future and on the basis of how each of these uses relates compatibly to the others. The following sections enumerate proposed objectives, principles, and standards for three of these land uses, all of which form the structural basis for the comprehensive General Plan.*

Residential Uses

Based upon the goals expressed by community representatives, the following objective for residential land use is proposed:

> To continually improve residential areas as places for living by ensuring that those portions of the city which are best suited for residential uses are maintained or will be developed into healthful, safe, pleasant, attractive neighborhoods where all citizens are served by a full range of appropriate community facilities.

In order to pursue this objective, a number of basic principles are proposed:

> To provide a full complement of utilities and facilities as necessary to serve adequately and efficiently the needs of the city's residents.
>
> To assure adequate living space and suitable residential environments by providing lot area requirements for each type of dwelling unit.
>
> To prohibit incompatible non-residential uses from residential areas.

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* Under state law, open space areas are also designated. Open space is discussed separately in the Open Space Element.

To encourage the improvement and maintenance of older residential areas in order to prevent decay, blight, and decline in property values.

To establish a commitment on the part of the city for the maintenance of quality and public participation in beautification efforts.

Based on these objectives and principles, the General Plan recommends the following classifications and standards for residential development within the existing city.

Single Family Residential: The intent of this urban low density classification is to provide for residential development on lots of not less than 7,200 square feet for each dwelling unit. *The overall density would not exceed 4.5 dwelling units per gross acre. This density classification allows for the typical subdivision pattern found in El Centro and throughout Southern California.

Multiple Family Residential: The intent of this urban medium density classification is to provide for several types of multiple family developments. Two general categories are proposed which will accommodate dwelling unit densities ranging from 8 to 20 units per gross acre. The low end of the scale provides for residential development with 3,600 square feet per dwelling unit, a standard compatible with duplex-type units with an overall density not exceeding 9 units per gross acre.

The intent of the high medium density classification is to provide for residential development with an overall density not exceeding 20 dwelling units per gross acre. This density will accommodate concentrated apartment developments.

Innovative techniques should be encouraged in future developments in order to provide a greater variety of prices and types of dwellings.

* However, density bonuses permitting lots of not less than 6,000 square feet per dwelling unit may be allowed for governmentally administered home ownership assistance programs.

EL CENTRO CITY AREA

Table 10: Summary of Proposed Residential Density Standards

Density Class	Type of Housing	Characteristics	Range of D.U. per Net Acre	Maximum D.U. per Gross Acre	Minimum land area per D.U.	Approximate pop. density per sq. mi.
Urban Low Density (R-1)	Single Family Planned Residential Development	Typical Single Family Neighborhoods Complete Urban Services	4.0 -- 6.0 *	4.5 *	7,200 * sq. ft.	8,000 -- 11,000
Urban Medium Density (R-2)	Duplex - Triplex Two Family Residential Trailer Parks Single Family Residential Town House Development	Trailer Park Areas Areas in transition from Single Family Areas adjacent to more intensive land use	8.0 -- 12.0	9.0	3,600 sq. ft.	10,000 -- 15,000
Urban Medium & High Density (R-3)	Apartment Houses Town House Development Duplex - Triplex	Apartment House Town House	13.0 -- 20.0 (30.0)**	18.7 (29.7)**	1,750 sq. ft. (1,000 sq. ft.)**	15,000 -- 25,000

* Plus density bonuses permitting a minimum lot size of 6,000 square feet per dwelling unit for governmentally administered below market rate housing programs.

**with density bonus for large lots as currently described in the Zoning Ordinance.

In low density residential areas, for example, it may be possible to use the cluster concept which provides for the grouping of structures in a far more efficient relationship to streets and utilities while combining yards and setbacks into larger and more usable open spaces. Alternately, the patio house concept could be applied which involves putting two single family residential units on a side property line with a common wall. This permits doubling the size of the opposite side yard for each dwelling and provides more usable open space. It should, however, be used only where it is done in a consistent manner and where it will not change or disrupt the character of existing development.

Standards should be adopted that ensure high quality apartment developments with regulations and standards governing setbacks, side yards, landscaping, open space, and parking. Such standards will help the city in its efforts to enhance and improve the appearance of the residential areas and the city as a whole. Through incentives in the zoning ordinance, the grouping of several parcels of land for apartment development should be encouraged, particularly in the central portion of the city.

Such incentives would increase the efficiency of land usage and provide the greatest flexibility in terms of site design. Such incentives would also aid efforts to replace existing substandard housing units around the Central Business District.

One possible approach is to allow higher densities on larger parcels of land, or in other words, to have a sliding density limit based on lot size.

Commercial Uses

Based upon the goals expressed by the community, the following objectives for commercial land uses are proposed:

To achieve a balance of commercial uses that provide for the retail business, professional and other service needs of the city's residents and which will attract customers from the Imperial Valley and other areas

To provide adequate land at proper locations for the various types of commercial activities in order to provide optimum service to the community both now and in the future

To regenerate the Central Business District through a program of policies and actions aimed at its commercial vitality

To promote and encourage an overall improvement in efficiency and visual appeal for all commercial areas.

In order to pursue these objectives, a number of basic principles are proposed:

To require adequate off-street parking, landscaping, and access geared to each type of commercial activity in order to alleviate problems of traffic congestion and visual disorder

To prevent the intrusion of incompatible uses in commercial areas

To improve the relationship between commercial areas and adjacent non-commercial uses through the use of landscape buffers and masonry walls

To maintain a proper balance of commercial activities between the various commercial areas and the Central Business District, recognizing the Central Business District as a special type of commercial area *

To encourage the development of neighborhood convenience shopping facilities, to serve the needs of adjacent residential neighborhoods, with landscaped pedestrian walkways, adequate parking, and safe and efficient access from adjacent streets

To promote improved architectural quality of commercial buildings and to require adequate setbacks, proper landscaping, site maintenance, and visual compatibility

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* See Special Study for C.B.D.

To provide adequate municipal services to all commercial areas, including the improvement of street appearance through a program of street tree planting, improved street lighting, and the relocation of unsightly utility wires and poles and rubbish receptacles.

Based on these objectives and principles, the General Plan recommends the following classifications and standards for commercial development within the existing city:

Neighborhood Convenience Centers: The neighborhood center is typically comprised of a market, drug store, variety store and a number of small shops and personal service establishments. The size of the neighborhood center ranges between three and seven acres with about 50,000 square feet of gross commercial floor area. Such a center serves a local trading area with a resident population of between 3,000 and 5,000 people and should be located as near the center of the trading area as possible and along either major or secondary arterials.

Neighborhood centers should be located at least one-half mile apart and their development should conform to good design standards to insure the protection of nearby residential neighborhoods, designed in such a way as to become part of such neighborhoods.

Major Shopping Centers: A major shopping center requires much more land than a neighborhood center, ranging from 20 to over 100 acres in size. Smaller facilities are sometimes referred to as Community Centers. In addition to providing convenience goods and services to adjacent residential neighborhoods, these centers provide a wide spectrum of goods with department and junior department stores being the primary attractions. The trading area required to support a community center includes a number of neighborhoods and a consumer population in excess of 10,000 people. A regional center requires the support of a population in excess of 100,000 people.

Major shopping centers should be located at least two miles apart and as close as possible to the centers of their respective trade areas. These centers should be at the intersection of two arterial highways, preferably near a freeway interchange.

Highway Commercial: This classification includes those commercial uses which are located on and should be directly related to highways. Typical uses include gas stations, restaurants, hotels and motels, and related uses. Highway commercial uses, where possible, should be concentrated in areas most appropriate for such development and not be allowed to sprawl in a continuous unsightly pattern along all highway frontage. Development standards should insure

that such uses do not reduce highway traffic capacities nor adversely affect the quality of surrounding residential neighborhoods or the visual quality of the community as a whole by requiring adequate setbacks, adequate landscaping and buffers, and adequate off-street parking and access and sign control.

The Central Business District: The Central Business District is a unique commercial area with both a wide variety of activities and a number of special problems and resources. A special study was conducted in order to gain a broader understanding of the Central Business District. The findings and recommendations of this study are reported in the Community Design Element of this General Plan.

At present, the City of El Centro is served by a variety of commercial enterprises. Because of its unique role as a regional center, the city has attracted a volume and diversity of commercial activities above the norm for a city of its size. However, continuing growth, reinforced by expectations of future growth brought about by geothermal energy development, has intensified pressure for further commercial development. The General Plan proposes a strategy of accommodating future commercial growth in a way which will consider the best interests of the community as a whole. Two particular concerns are addressed.

Of particular importance are the frontages along Fourth Street and Imperial Avenue between the Central Business District and the freeway. If, as expected, pressures for highway commercial development along these major streets bring about development, a number of potentially serious problems are likely to occur.

A number of lots on both of these streets are currently of insufficient depth and are oriented in such a way to insure a number of problems if development is not carefully guided. Driveways serving commercial properties would occur so frequently in some areas that the smooth flow of traffic would be disrupted. Furthermore, it would be almost impossible

to provide both adequate parking and sufficient buffers to protect existing nearby high quality residential areas.

Attractive, well landscaped development is of critical importance on these two streets which serve as major routes from the freeway to the Central Business District and Civic Center and which form a visitor's first impression of the city as a whole.

The General Plan proposes a special zone of highway commercial use along Fourth Street. Development standards would only allow future highway commercial development on lots (or assembled sets of lots) with a minimum depth of 180 feet and would require adequate landscaping, parking, and access, as well as block walls between such development and adjoining residences. A similar-parking and landscape zone is likewise suggested for the highway commercial frontage south of I-8 between Fourth Street and the proposed Imperial Avenue extension. The General Plan reserves much of Imperial Avenue for existing residential uses.

It is also recommended that the city establish an architectural review board which would evaluate proposed developments as an aid in insuring that the visual image of the community is protected and upgraded.

Another important issue is the potential need for a third major shopping area or center. Though the two existing shopping districts, the Central Business District and the North Imperial District, are far from operating at capacity, future growth may bring about a need for an additional shopping center.

A new shopping center may be located outside the existing city because of both a lack of a sufficiently large site in the developed area and because of an economic need to be located some distance (at least a mile or two) away from existing large shopping areas. Discussion and proposals

pertaining to a new shopping center can be found in a following section of this Land Element which focuses on the city's area of influence.

Industrial Uses

The industrial category provides land for industrial and manufacturing activities and for an appropriate relationship to the supporting services such as railroads and highways.

The industrial objective is as follows:

> To provide for a variety and range of industrial sites so that it is economically feasible to manufacture and provide goods, services, and employment in attractive and convenient locations.

To accomplish the objective of the Plan, the following principles are established:

> To encourage and promote El Centro as a regional center for general, agriculturally oriented, and geothermal related industry
>
> To prevent the intrusion of all incompatible uses that would reduce the efficiency of the industries and their opportunities for growth
>
> To protect adjacent residential areas from the intrusion of industry related noise, light, and visual clutter by proper screening, landscaping and the use of buffers
>
> To encourage and promote the general visual improvement of existing industrial areas.

In order that the preceding objectives and principles may be realized, the utilization of land for industry should conform to the following standards. These may be applied to new industrial uses, as well as to the improvement of existing uses.

> The least intensive industrial uses should be located as a transition between the heavier uses and adjacent residential or other non-industrial areas.

Access to manufacturing districts should not be through or along the border of a residential area. Traffic should collect on industrial streets located within an industrial district then be routed to external areas by way of major highways and freeways.

Interior industrial subdivision circulation should be simple, functional, and be built to industrial standards.

Where possible, access to railroad lines, by way of spur trackage, should be available to those industries desiring this type of service.

Adequate setbacks and landscaped front yards should be required to improve the visual quality of the industrial environment, especially when located adjacent to arterials.

All storage and waste areas should be screened from view to enhance the quality of the environment

An extensive program of overall industrial area beautification and maintenance should be encouraged to assure the maintenance of a high quality for all industrial districts.

Objectives and Principles: Area of Influence

As will be discussed, it appears certain that a substantial amount of residential and other types of development will take place in the city's area of influence which is presently under County regulation.

The following objectives and principles are proposed for the planning and management of such growth in the area of influence:

To develop a pattern of settlement compatible with efforts to preserve agricultural land and infrastructure

To provide a variety of housing types ranging from rural to urban in character affordable by a diversity of economic groups

To develop a pattern of development compatible with the structure of the existing city in an orderly and efficient manner

To provide for anticipated population and economic growth due to geothermal development and other possible growth inducing factors

To guide growth in order to insure public services and facilities can be provided at reasonable costs to the community as a whole

To coordinate proposals with the County in order to administer plans in the immediate period prior to annexation.

THE EXISTING CITY

Shown in Figure 10 is the overall pattern of development and land use within the City of El Centro. This generalized pattern was drawn from a lot-by-lot land use inventory which was conducted as part of a "windshield survey" of the entire city. A statistical summary of the land use inventory is shown in Table 11.

An area of high density and mixed residential uses is located around the Central Business District, in turn surrounded by an area of predominantly single family residences. There is limited amount of higher density residential uses outside the central area, usually being located on or near major streets.

Industrial uses are almost entirely confined to an area immediately east of the Southern Pacific Railroad lines.

Commercial uses, other than neighborhood facilities, are almost completely concentrated in the Central Business District and is an outlying area roughly centered on the intersection of Adams and Imperial. In between these two major commercial districts is an area of mixed uses including the Civic Center, County Offices, a variety of commercial uses, and some residences. This commercial and government district represents a reasonably compact and efficient activity center within easy reach by the majority of the city's residents.

However, concerns expressed by the community and additional analyses brought forth a number of problems which should be addressed in revising the Land Use Plan. Of concern is the possible future erosion of the Central Business District, the decline of older residential neighborhoods, and the city's ability to accommodate future growth.

FIGURE 10



LAND USE INVENTORY

CITY OF EL CENTRO, CALIFORNIA

EL CENTRO PLANNING COMMISSION

SCALE IN FEET 400 0 800 1600 2400 NORTH

AGRICULTURAL	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	INSTITUTIONAL	PUBLIC USES & FACILITIES		CIRCULATION
CROPS	SINGLE FAMILY RESIDENTIAL	COMMERCIAL	INDUSTRIAL	CHURCH, SCHOOL	CH CITY HALL	ELEMENTARY SCHOOL	MAJOR HIGHWAY
ANIMAL RAISING	TWO FAMILY RESIDENTIAL	HOTEL	RAILROAD RIGHT-OF-WAY	LODGE, MEETING HALL	P POLICE STATION	JUNIOR HIGH SCHOOL	IMPORTANT STREET
OPEN	THREE & FOUR FAMILY	MOTEL	UTILITY	MIXED	F FIRE STATION	HIGH SCHOOL	
DRAINAGE & IRRIGATION CANAL	FIVE OR MORE FAMILY			RESIDENTIAL COMMERCIAL	L LIBRARY		
VACANT LAND	TRAILER PARK	PARKING		RESIDENTIAL INDUSTRIAL	COUNTY FACILITY	PARK & RECREATION	
				COMMERCIAL - INDUSTRIAL	STATE FACILITY		
					FEDERAL FACILITY		
					HOSPITAL		

SECTION II

Table 11:
El Centro General Plan
Land Use Inventory - 1977

Use	Acres	Percent of Total
Residential	1084.8	33.2%
Single Family & Duplex	870.7	
Multiple	129.7	
Mobile Homes	84.4	
Commercial	202.5	6.1%
Commercial Uses & Parking	179.7	
Hotel/Motel	22.8	
Industrial	270.1	8.2%
Utility	169.2	5.1%
Public	313.4	9.5%
Schools	136.0	
Parks	73.5	
Other public uses	103.9	
Institutional	37.4	1.1%
Mixed Uses	10.4	.3%
Railroad R.O.W.	60.0	1.8%
Vacant Land	462.8	14.0%
Streets & Highways	633.9	19.2%
Alleys	51.6	1.6%
TOTAL	3296.0	100.0%

Commercial development has spread along Imperial Avenue over a length of about one mile between Brighton and Lincoln Avenues. This "North Imperial District" could conceivably become the main retail area of the city in the near future, eclipsing the Central Business District because of its somewhat better access to the north and because of the general movement of population, particularly higher income households, toward the western edges of the city.

Furthermore, some visiting shoppers and many tourists enter the city along North Imperial Avenue and this district is the first commercial area they encounter. Though the area is at a slight disadvantage relative to the Central Business District in terms of its accessibility to the majority of non-local shoppers (coming north from Mexicali), improved access to and from the freeway on Imperial will probably make this disadvantage negligible.

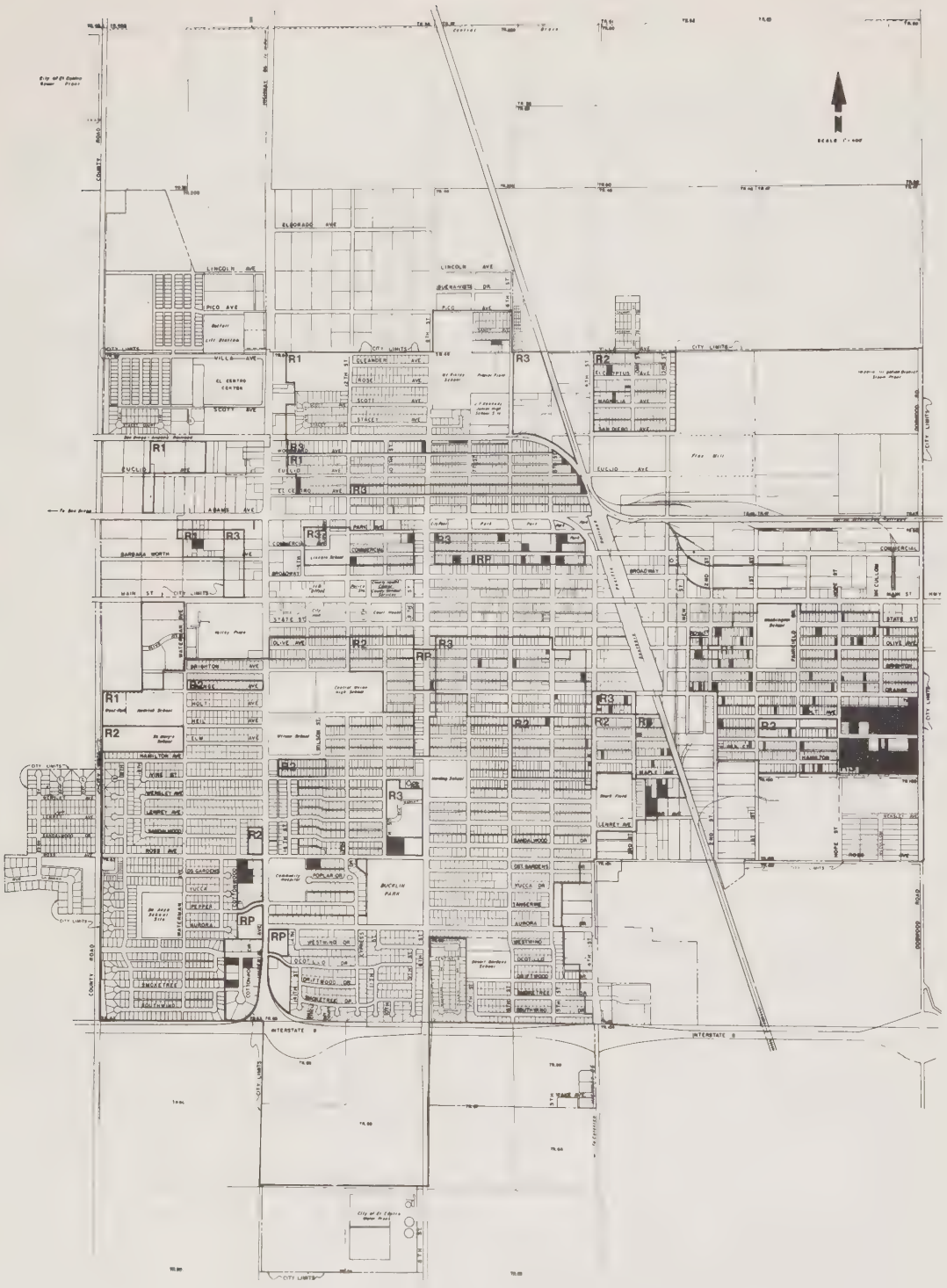
To compete effectively, the Central Business District must be upgraded in a number of ways which will be discussed in detail elsewhere. (See the C.B.D. Special Study.) In addition, the traffic carrying capacity and visual quality of the Fourth Street route must be maintained and improved.

In the interest of maintaining residential neighborhoods, it should be noted that a survey of housing conditions revealed that the majority of inadequate housing units are concentrated in the areas immediately north and south of the Central Business District and in an area on the east side of town which is almost completely surrounded by industrial uses. Revisions of the land use plan should be compatible with public and private efforts to upgrade these neighborhoods.

The area surrounding Fourth Street between the Central Business District and the freeway is another area of community concern. As mentioned, Fourth Street is the major entrance to the city from the south and should be maintained accordingly. Unsightly strip commercial development (and associated traffic problems) should be avoided. Designated uses should also be in accordance with efforts to improve existing housing in adjacent areas. The residential area south of the central business district and adjacent to Fourth Street contains both a number of substandard homes, as well as a district of older houses which have recently been significantly upgraded by individual homeowners. Inappropriate uses along Fourth Street may significantly impair both public and private improvement efforts.

The city's ability to accommodate future population growth must also be addressed in the land use plan. Little residentially-zoned vacant land remains in the City as indicated in Figure 11. Calculations of the population carrying capacity of such land in the central portion of the city under current zoning revealed that about 850 people or only about two years of population increase at current growth rates could be accommodated on undeveloped land. However, many lots in the central area are not currently being used to the maximum allowed by their zoning. As an alternative to growth outside the central area, the city should consider providing incentives to encourage at least the replacement of inadequate single family units with new apartment units if a lot is appropriately zoned. Rough calculations indicate that if all the existing substandard single family houses on R-3 lots were replaced with multiple units, about 300 additional people could be accommodated in the central

FIGURE 11



LAND USE INVENTORY

CITY OF EL CENTRO, CALIFORNIA

EL CENTRO PLANNING COMMISSION

SCALE IN FEET 800 0 800 1600 2400 NORTH

AGRICULTURAL	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	INSTITUTIONAL	PUBLIC USES & FACILITIES				CIRCULATION
CROPS	SINGLE FAMILY RESIDENTIAL	COMMERCIAL	INDUSTRIAL	CHURCH, SCHOOL	CH CITY HALL	E ELEMENTARY SCHOOL			MAJOR HIGHWAY
ANIMAL RAISING	TWO FAMILY RESIDENTIAL	HOTEL		LODGE, MEETING HALL	P POLICE STATION	J JUNIOR HIGH SCHOOL			IMPORTANT STREET
OPEN	THREE & FOUR FAMILY	MOTEL	RAILROAD RIGHT-OF-WAY	MIXED	F FIRE STATION	H HIGH SCHOOL			
DRAINAGE & IRRIGATION CANAL	FIVE OR MORE FAMILY		UTILITY	RESIDENTIAL - COMMERCIAL	L LIBRARY				
VACANT LAND	TRAILER PARK	PARKING		RESIDENTIAL - INDUSTRIAL	COUNTY FACILITY	PARK & RECREATION			
	VACANT LAND			COMMERCIAL - INDUSTRIAL	STATE FACILITY				
					FEDERAL FACILITY				
					HOSPITAL				

portion of the city.*

Together, new construction on vacant land and on under-utilized lots in the central portion of the city could accommodate only about three years of population increase at current growth rates. Clearly, additional housing units will have to be constructed in outlying portions of the city. At a minimum, population is expected to grow by 10,000 people over the next twenty years and could grow by as much as 20,000 or 30,000 people. Because of a limited potential for further residential development within the city, large amounts of land outside the city's current boundaries will have to be developed.

* Development standards requiring adequate access and appropriate site designs should be designed to insure that such "redevelopment" does not conflict with existing uses.

SECTION III

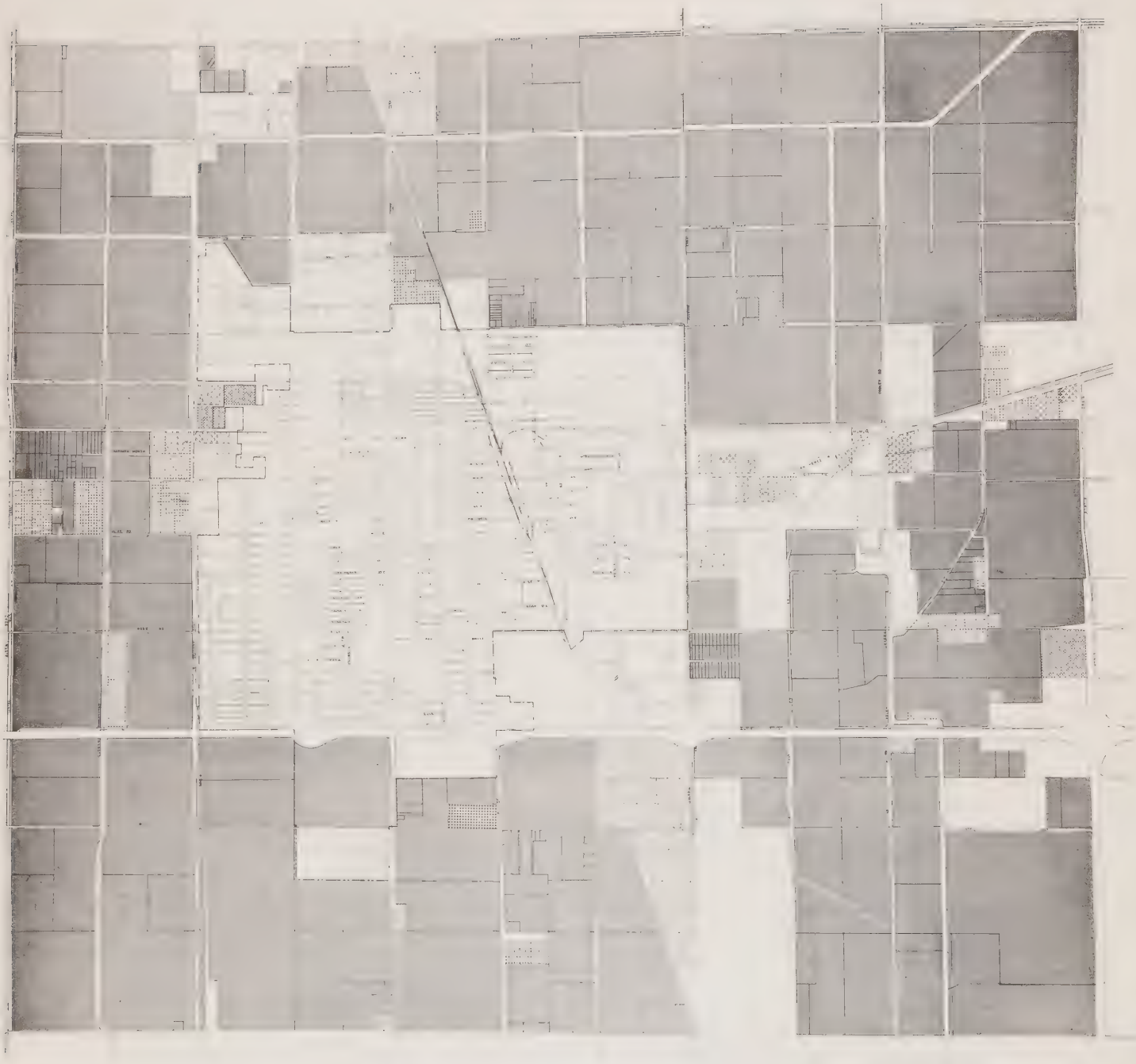
AREA OF INFLUENCE

As shown in Figure 12, the area surrounding the city is still used predominantly for agriculture though a number of subdivisions and individual houses have been built recently on relatively large lots at varying distances from the existing city limits. A number of subdivisions and individual houses have been built west of the city. Individual houses also have been built immediately north of the city and south of the freeway near Fourth Street. Residential development east of the city is quite scattered and varied.

A district of mixed uses, consisting mainly of industrial and commercial operations, with some residences, has developed east of the city along a corridor bounded by the Inter-urban railroad and Main Street. This district extends all the way from the city limits to the intersection of Main Street with Highway 111, a distance of about one and a half miles. A large industrial plant is located east of the Southern Pacific railroad and south of the freeway.

The city is currently constructing a new sewer line which will extend sewer service into a large area west and south of the existing urbanized area. The projected sewer service area is shown in Figure 13. This new sewer line is expected to be a powerful incentive for further development toward the west and south, particularly since the recent trend in new residential development has been in this direction.

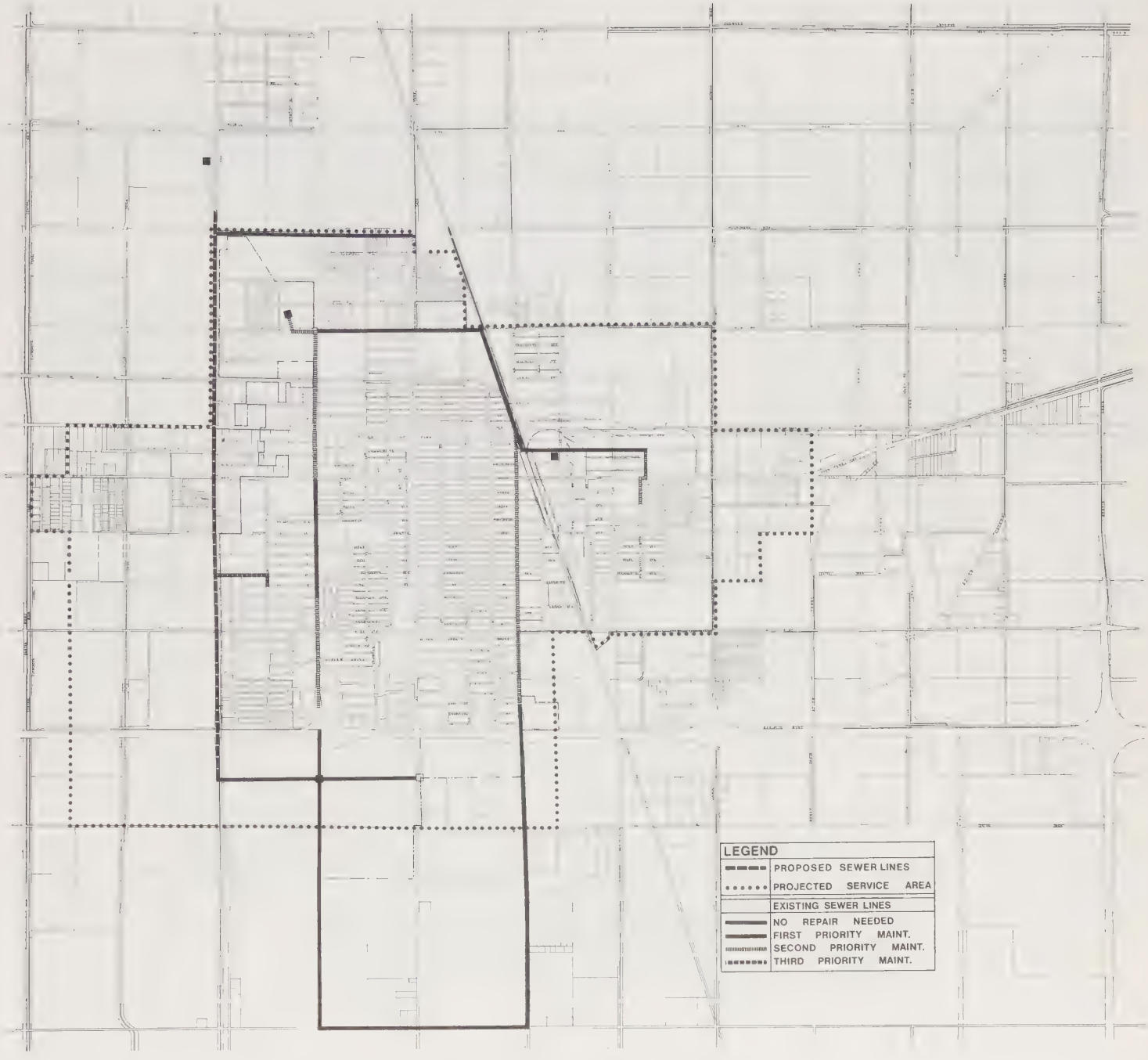
FIGURE 12



EXISTING LAND USE

CITY OF EL CENTRO PLANNING AREA

	AGRICULTURE		INDUSTRIAL
	RURAL RESIDENTIAL		MED-HIGH DENSITY
	COMMERCIAL		MOBILE HOMES
	PUBLIC		



SEWER SYSTEM

CITY OF EL CENTRO PLANNING AREA

EL CENTRO PLANNING COMMISSION

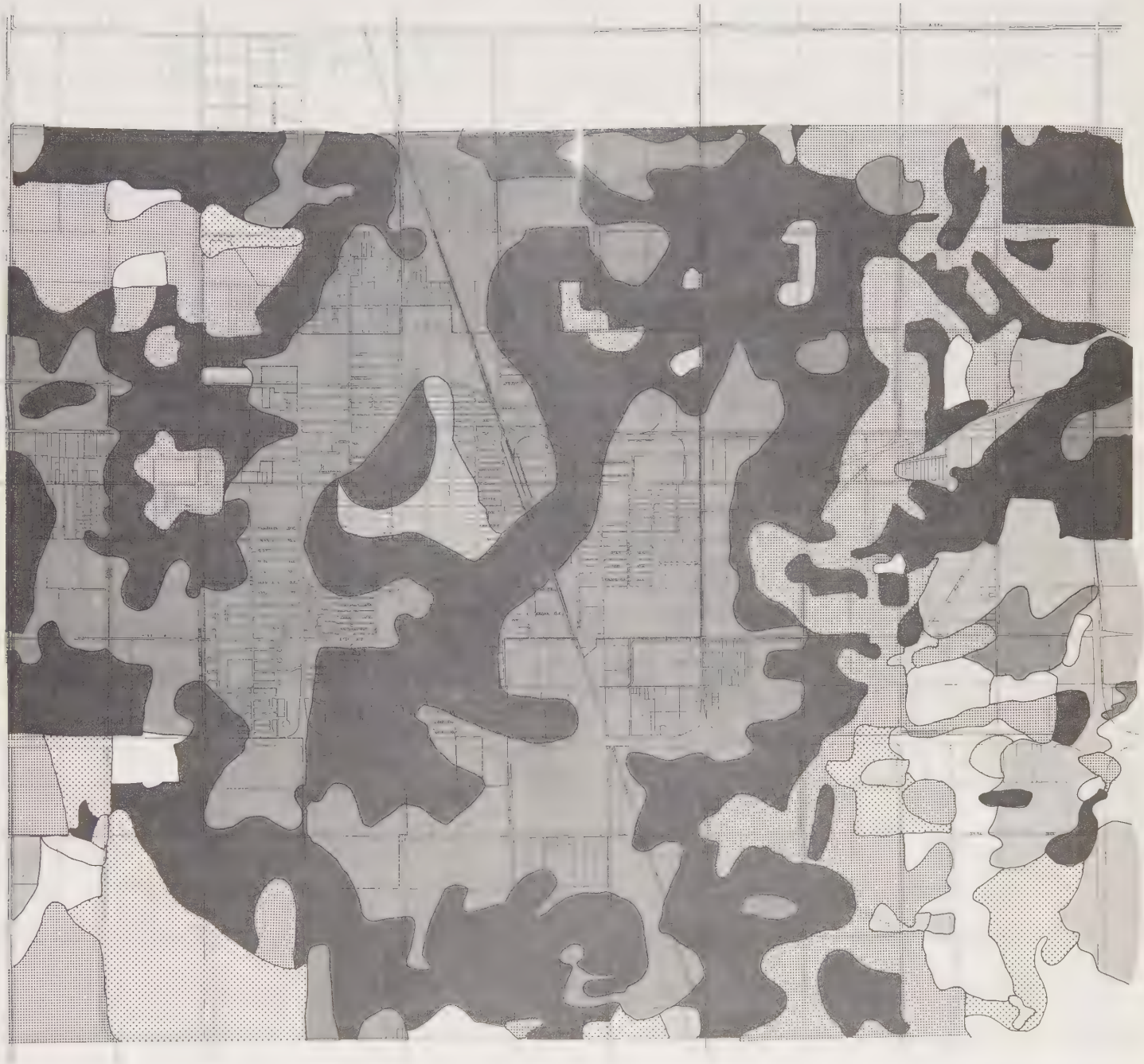
Much of the undeveloped land around the city consists of Class III agricultural soils. This is particularly true north of the freeway. There are scattered pockets of better quality Class I and II soils in the extreme northwest and southwest corners of the area of influence. To the east, there is a relatively narrow and winding band of Class II soils mixed with Class III soils. This band of Class II soils widens gradually southward, becoming a much more extensive area south of the freeway in the southeast corner of the area of influence. Specific soil types are shown in Figure 14.

In order to most effectively preserve high quality agricultural soils, the areas most appropriate for future city expansion are: (1) west of the city between the San Diego/Arizona rail lines and the freeway; (2) northeast of the city toward the intersection of Dogwood and Cruickshank Roads; (3) south of the freeway between La Brucherie and Dogwood Roads; and (4) east of the city between the inter-urban railroad and the freeway. Even at relatively lower densities, calculations indicate that these areas are sufficient for enough new residential development to accommodate the highest anticipated population growth over the next twenty years. There would also be sufficient land to accommodate the expansion of industrial and commercial activities.

Each of these proposed areas for expansion has a number of potential difficulties and benefits associated with development:

> Area 1: This area will be served by the new sewer line. Though much of the area consists of Class III soils, immediately to the west is a large area of Class II soils and further development in Area 1 will intensify pressure to develop these more valuable agricultural lands. A further extension of residential development

FIGURE 14



SOIL CONDITIONS

CITY OF EL CENTRO PLANNING AREA

- MELOLAND & HOLTVILLE LOAMS, WET
- HOLTVILLE SILTY CLAY, WET
- VINT LOAMY FINE SAND, WET
- INDIO LOAM
- INDIO VINT COMPLEX
- INDIO LOAM, WET
- MELOLAND VERY FINE SANDY LOAM, WET
- IMPERIAL SILTY CLAY, WET
- IMPERIAL–GLENBAR SILTY LOAM

may impact the viability of the Central Business District if an alternative shopping area becomes established further west (on Imperial Avenue, for example).

Area 2: This area will not be served by sewers unless additional lines are constructed. The area is relatively inaccessible to the rest of the city because of the railroad tracks and the lack of a crossing.

Area 3: Much of this area will be served by the new sewer line. However, once major development jumps the freeway, pressures to develop adjoining high quality agricultural lands will intensify. The premature development of a large shopping center in this area would also siphon away major support from existing commercial areas in the northern and central portions of the city. The eastern portion of this area is undesirable for residential development because of odors from the nearby nitrogen plant.

Area 4: The area is criss-crossed with a number of irrigation and drainage canals which may pose problems for development in some locations. Residential development at appropriate locations in Area 4, rather than on the far westside, may help strengthen the vitality of the downtown commercial area if good accessibility to the Central Business District is provided. New good quality development should also aid public and private efforts to upgrade adjacent residential neighborhoods on the east side of the existing city. Little of the area will be served by sewers unless additional lines are constructed.

Each of the areas suitable for expansion are outside the existing city limits and are currently administered by County government. Current County development standards set a minimum lot size of 6,000 square feet for all single family residential uses. However, until now sewerage disposal requirements in the absence of sewer lines have meant that much larger lots were most often developed. It is possible that as sewer service is extended into these areas, a pattern of mixed lot sized will come about if current development standards are not changed. For example, a pattern of development much like that already existing north of the city could result and pose a number of future problems. Some residents will have large lots and keep horses to the detriment of neighbors on

smaller lots. Many lots are likely to have inadequate access to roads making the provision of some public services difficult. A haphazard pattern of development can also exert an influence on homeowners willingness to maintain their property and their ability to secure improvement loans.

Table 12

COMPARISON OF CITY AND COUNTY RESIDENTIAL DEVELOPMENT STANDARDS

ZONING		MINIMUM LOT SIZE		MAXIMUM DWELLING UNITS/GROSS ACRE		APPROXIMATE RANGE OF POPULATION DENSITY/SQ.MI.	
City	County	City	County	City	County	City	County
--	RA	--	6,000 sq.ft.	--	5.45	--	
R-1	R-1 R-1-T	7,200 sq.ft.*	6,000 sq.ft.**	4.54	5.45 (8.17)**	7,000 -- 10,000	8,400 -- 12,000
R-2	R-2	3,600 sq.ft. per unit	3,600 sq.ft. per unit	9.08	10.90	9,000 -- 13,000	10,800 -- 15,600
R-3	R-3	1,750 sq.ft. per unit OR 4 units + 1 unit/1,000 sq. ft.	2,000 sq.ft. per unit	18.67 OR 29.67	16.34	13,000 -- 20,000	11,400 -- 17,500
R-P	--	7,200 sq.ft	--		--		--
--	R-4-T	--	6,000 sq.ft. per unit		5.45	--	

* However, density bonuses permitting lots of not less than 6,000 sq. ft. per dwelling unit may be allowed for governmentally administered home ownership assistance programs.

** 3,600 sq.ft/unit if 400 sq.ft./lot is included in common use recreational area.

Table 13

COUNTY REQUIREMENTS: WATER, SEWAGE DISPOSAL AND FLOOD CONTROL

Minimum lot: Size in Subdivision	Flood Control	Sewerage Disposal	Water
20,000 ft.	Right of way grant and construct channel and any required structure	Complete central collection and treatment	Central supply under pressure to each lot
1 acre	Same	Varies with soil conditions. Ind. unit may be allowed in single family dwelling	Same
2-5 acres	Same	Individual treatment allowed for s.f. units	Water that can be made potable to each lot
10 acres	Required right-of-way offered for dedication	Same	Water available to subdivision

Proposed Residential Development Standards

Based on the existing pattern of development in the area of influence, community goals, and expectations of future population growth, a range of density standards (or minimum lot size standards) extending from urban to rural in character is proposed. A summary of these proposed standards is shown on Table 14 .

Rural Residential: The intent of this classification is to provide for residential development which is rural in character on large lots where occupants could keep horses and other large animals. Lots would be a minimum of one acre in area. This type of development is also intended as a buffer between higher density urbanized areas and surrounding agricultural areas.

Complete central water and sewer services would usually be required. However, for development involving lots greater than one acre, individual sewerage treatment units may be allowable if soil conditions are appropriate.

Residential Estates: The intent of this classification is to provide residential development on lots somewhat larger than those found in typical suburban areas. This type of development serves as a transition between urban/suburban development and the large lot, more rural types of development proposed for outlying areas. The minimum lot size would be 15,000 square feet.

Residential Suburban: The intent of this classification is to provide residential development on lots moderately larger than typical city lots in order to reduce densities and to promote a suburban character. The minimum lot size would be 10,000 square feet.

Urban Low Density: The intent of this classification is to provide typical urban single family development like that currently being constructed in El Centro. Such development would be most appropriate adjacent to existing similar development or other more intense compatible uses.

At this time, it does not seem either appropriate or necessary to extend higher density residential uses throughout the area of influence. However, accelerated future growth may change this. The city's existing higher density classifications and standards appear adequate and could be applied in future plan modifications.

Table 14

Area of Influence

SUMMARY OF PROPOSED RESIDENTIAL DENSITY STANDARDS

Density Class	Type of Housing	Characteristics	Range of D.U.'s per net acre	Maximum D.U.'s per Gross Acre	Minimum land area per D.U.	Approx. pop. Density per sq. mi.*
Rural Residential (RR)	Single Family Estate Housing Planned Residential Development	Larger homes on large lots Equestrian Facilities Golf Course Developments Country Club Living Complete Urban Services	.5-1.0	.9	1 acre	850-1,750 (.75)
Residential Estates (RE)	Single Family Planned Residential Development	Large lot subdivisions Adjacent to existing areas	1.5-3.0	2.3	15,000 sq.ft.	2,500-5,000 (2.0)
Suburban Residential (RS)	Single Family Planned Residential Development	Large lot subdivisions	2.0-4.0	3.4	10,000 sq.ft.	3,500-7,000 (3.2)
Urban Low Density (R-1)	Single Family Mobile Home Subdivisions Planned Residential Development	Typical Single Family Neighborhoods Complete Urban Services	4.0-6.0	4.5	7,200 sq.ft.	8,000-11,000 (4.5)

* Assumes each dwelling unit houses 3.3 people. Somewhat lower than the maximum dwelling units/gross acre were used in this calculation, primarily for the lower density uses, to allow a variety of lot sizes and to insure the population estimates were conservative. The assumed densities are shown in parenthesis.

Commercial Uses

As mentioned previously, there may be an eventual need for a third major shopping center if future growth continues or is accelerated because of geothermal resource development. Such a new center will probably be located in the city's area of influence because such a facility would require several acres of land at some distance from existing major centers.

These existing shopping centers are currently not being utilized at their full capacity. For example, the North Imperial district has a number of vacancies, while the Central Business District is underutilized.

Population growth in excess of 10,000 people would be necessary to support a third center if the level of activity in these existing commercial areas is to remain relatively constant. A number of uncertainties are involved, however.

Approximately 30% of the total taxable retail sales in El Centro is attributable to non-local shoppers, principally from Mexicali. This non-local component of the retail market may greatly increase -- or decrease -- in the future. A recent study concluded:*

> "Any event having a major economic impact on Mexicali's economy will have a significant impact on retail trade in Calexico and El Centro, and thus on jobs, sales tax receipts and the general economic growth of Imperial County. The peso devaluation causes a 34% real-dollars drop in Calexico retail trade... In El Centro the drop was 11% and 1977 figures are still below trends previously projected."

---

* Border Area Development Study, Retail Sales and Retail Jobs: The Mexicali-Imperial County Connection; 1977, p.3 (preliminary draft)

Relying on non-local support for commercial areas may be risky, particularly since major commercial developments are currently underway in Mexicali and Calexico. These developments, coupled with future peso devaluations, could reduce the flow of Mexicali shoppers to El Centro.

On the other hand, it is also possible that increased spending by non-local customers coming to Valley recreation areas could bring about a set of conditions in support of a third shopping center even before substantial population growth takes place. However, this is equally uncertain at this time.

In sum, El Centro appears to be a changeable market and the need for a third center will be in doubt until the impacts of anticipated geothermal development and other potential growth causing factors are better known.

It seems judicious to assume that a new shopping center will not be needed until the local population grows by approximately 15,000 people. This figure reflects both a need to generate additional support for existing commercial areas and the increase in the local market needed to support an additional facility. At the current rate of population growth of 2% per year, a new shopping center would not be needed for approximately 20 years. Even at a growth rate of 6% per year (the highest growth scenario), such a need would not arise for 7 years.

If a major shopping center is developed without sufficient support or in an eventually shrinking market, existing commercial areas will suffer and efforts to revitalize the Central Business District would probably be wasted or become ineffectual, as has been the case in many other cities.

Existing commercial development standards appear to be adequate for insuring that a new shopping center will be built in an acceptable manner compatible with community goals and objectives.

Industrial Uses

It is also expected that additional land for the future expansion of the industrial sector of the city's economy will be needed. Little vacant land suitable for industrial uses remains in the city, so future industrial development stimulated by geothermal energy development will by necessity have to take place in the city's area of influence. New industrial uses should be confined to areas adjacent to existing industrial activities in accordance with overall community goals.

Existing industrial development standards appear adequate to insure good quality industrial development. However, it is proposed that the City embark on a detailed study of how these standards should be improved to address the unique requirements and particular problems associated with geothermal-related activities.

It is also suggested that the City initiate a detailed study of the district of mixed industrial and commercial uses extending from the city limits along East Main Street to Route 111.

The proposed highway linking Indio with Calexico along the current path of Route 111 may make this area an important portal to the city in the future. The current pattern of development is haphazard and unsightly and includes a number of substandard dwelling units. Unless plans for improving this area are begun soon, it may well become a critical problem in the future, affecting the city's ability to attract tourists and others traveling from or on their way south to Baja.

SECTION IV

AN INTEGRATED GROWTH MANAGEMENT PLAN

The General Plan map indicates the proposed land use plan for the City of El Centro as defined by current city boundaries. This plan incorporates the community goals and objectives outlined in the preceeding sections of the Land Use Element. Summary land use statistics for the proposed plan are shown in Table 15.

Shown in Figure 15 is the generalized pattern of existing zoning. For the most part, current zoning is in conformance with the proposed plan. Two important exceptions, however, should be noted. The land use plan proposes a new use district along Fourth Street and land fronting along the southern side of I-8 for reasons noted in previous discussion. This new zoning classification will therefore be necessary in these areas or others deemed appropriate by the Planning Commission and City Council.*

The land use plan also proposes a district of somewhat higher density residential uses around the Central Business District as part of an incentive package to attract new private development compatible with efforts to revitalize this commercial area. A new zoning provision has been added which allows space, now required for setbacks and side yards, to be consolidated into more usable open space areas.

Shown in Figure 16 is the proposed land use plan for the city's area of influence. This plan reflects community goals and the proposed objectives and principles to be used on planning for and managing future growth. Summary statistics for this proposed plan are shown in Table 16.

Discussion throughout the text of this land use element and other sections of the General Plan has emphasized that the pace and extent

*A more detailed set of zoning changes necessary for consistency with the proposed General Plan have been submitted by the Consultant.

of future population growth is uncertain because of a variety of factors. The proposed plan for growth is based on the judgment that the city would likely have to accommodate at least 10,000 people over the next twenty years, but may have to accommodate as many as 30,000 people if explosive growth takes place.

A crucial element of the proposed plans for the area of influence is that the future expansion of the city will occur in a phased and timely and efficient manner. This is necessary to insure an adequate utilization of land in order to protect agricultural lands and to insure new development can be supplied with necessary municipal facilities and services efficiently at reasonable costs to the taxpayers of the community as a whole.

In implementing the plan, it is proposed that city expansion take place in two phases of development. The first phase of development would occur in already settled areas and in undeveloped areas adjacent to existing development. Figure 17 indicates the approximate boundary proposed for this phase of expansion.

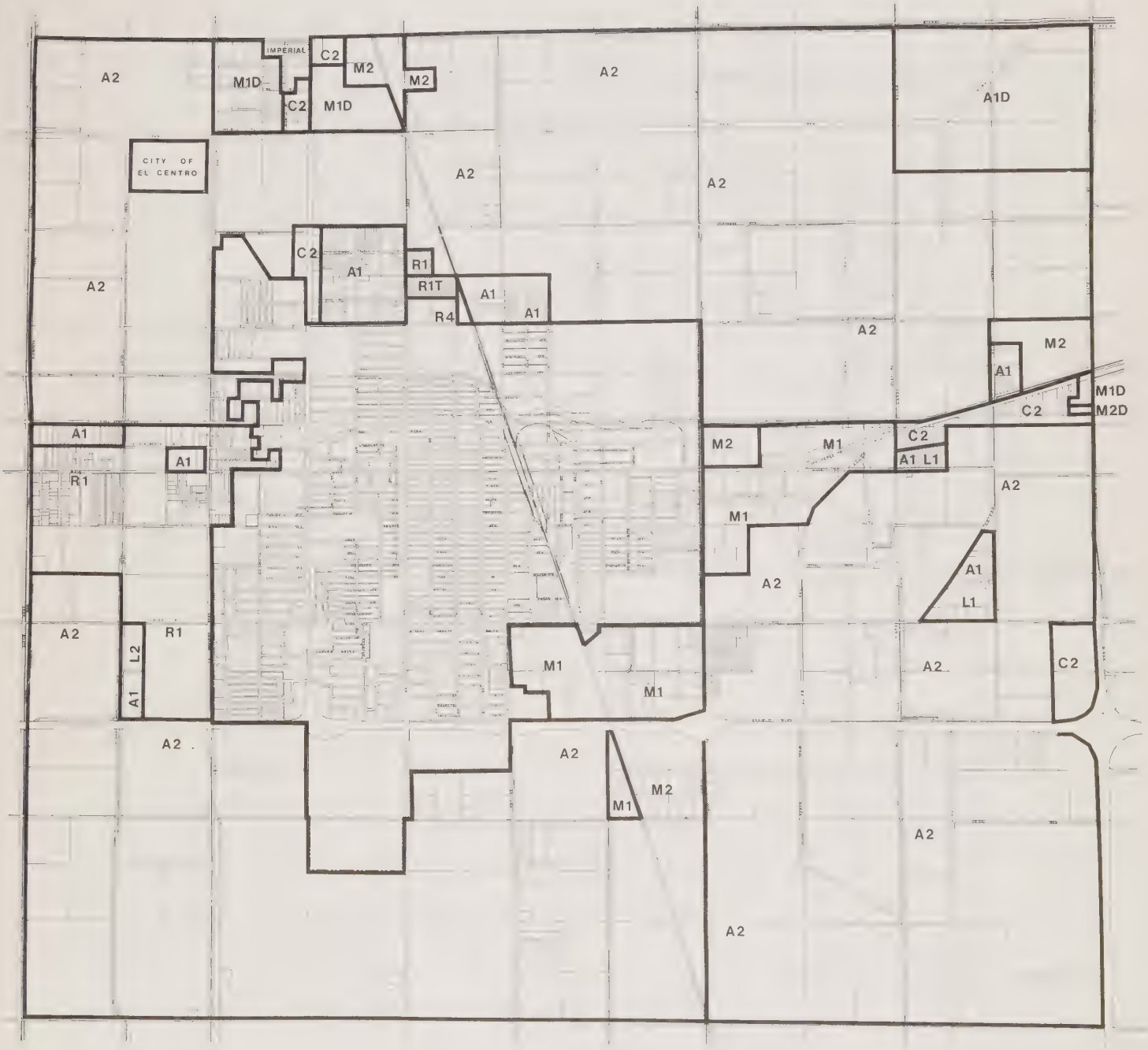
This first phase of expansion would accommodate approximately 30,000 additional people at the designated densities and with sufficient land for necessary public facilities and neighborhood commercial centers. Once development within specific areas designated as phase one approaches capacity, second phases of expansion in contiguous areas may be permitted by appropriate Council action. As shown in the proposed plan, this phase would occur around the edges of the city's area of influence at somewhat lower densities than previously.

TABLE 15

COMPARISON OF EXISTING AND PROPOSED GENERAL PLANS:
LAND USE SUMMARY

Type of Land Use	Gross Acreage	
	1973 Plan	Proposed Plan
RESIDENTIAL		
Low Density	836	1,167
Medium Density*	450	392
High Density	322	374
COMMERCIAL	355	490
INDUSTRIAL	653	672
PUBLIC	363	329
OTHER	170	
Total	3,149	3,424

* Includes mobile home parks

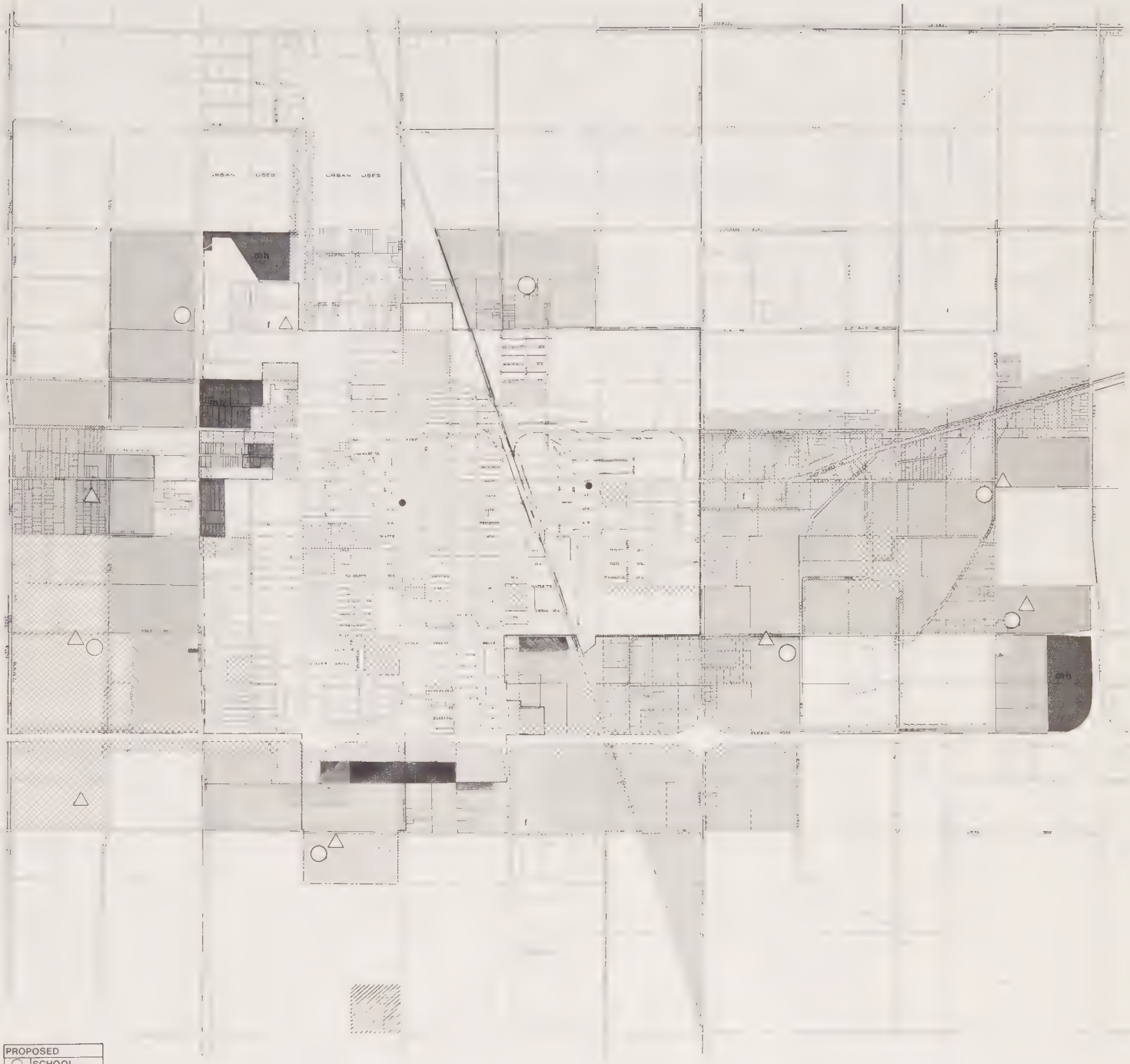


CURRENT ZONING

CITY OF EL CENTRO PLANNING AREA

EL CENTRO PLANNING COMMISSION

FIGURE 16



PROPOSED	
○	SCHOOL
△	PARK
f	FIRE STATION

	INDUSTRIAL
	COMMERCIAL
	SCHOOL
	PARKS & RECREATION
●	FIRE STATION
mh	MOBILE HOMES

	RURAL RESIDENTIAL	1 UNIT PER 2 ACRES
	RESIDENTIAL ESTATES	1 TO 3 UNITS/ACRE
	SUBURBAN RESIDENTIAL	2 - 4 UNITS/ACRE
	URBAN LOW DENSITY	4 - 6 UNITS/ACRE
	URBAN MED. - HIGH DENSITY	12 - 20 UNITS/ACRE

PROPOSED LAND USE PLAN
CITY OF EL CENTRO PLANNING AREA

PREPARED BY SIMON EISNER & ASSOCIATES AND URBAN INNOVATIONS GROUP

TABLE 16

PROPOSED AREA OF INFLUENCE PLAN: LAND USE STATISTICS	
Type of Use	Gross Acreage
RESIDENTIAL	
Rural Residential	402
Residential Estates	651
Suburban Residential	1,682
Urban Low Density	1,376
Mobile Home	131
Urban Medium-High Density	78
COMMERCIAL	494
INDUSTRIAL	856
Sub-total	5,325
AGRICULTURE AND OTHER USES	4,258
Total	9,583

SECTION V

Table 17

GROWTH MANAGEMENT PLAN

Summary of Residential Density Standards

Density Class	Type of Housing	Characteristics	Range of D.U. per net acre	Maximum D.U. per gross acre	Minimum land area per D.U.	Approximate pop. density per. sq.mi.
Rural Residential (RR)	Single Family Estate Housing Planned Residential Development	Larger homes on large lots Equestrian facilities Golf Course developments Country club living Complete urban services	.5-1.0	.9	1 acre	850-1,700
Residential Estates (RE)	Single Family Planned Residential Development	Large lot subdivisions Adjacent to existing residential development	2.0-4.0	3.4	10,000 sq.ft.	3,500 -- 7,000
Suburban Residential (RS)	Single Family Planned Residential Development	Large lot subdivisions	2.0-4.0	3.8	8,500 sq. ft.	4,000 -- 8,500
Urban Low Density (R-1)	Single Family Mobile Home Subdivisions Planned Residential Development	Typical single family neighborhoods Complete urban services	4.0-6.0	4.5	7,200 sq.ft.	7,000 -- 10,000
Urban Medium Density (R-2)	Duplex - Triplex Two Family Residential Trailer Parks Single Family Residential Town House Development	Trailer Park Area Areas in transition from single family Areas adjacent to more intensive land use	8.0-12.0	9.0	3,600 sq.ft.	9,000 -- 13,000
Urban High Medium Density (R-3)	Apartment Houses Town House Development Duplex - Triplex	Apartment house Town house	13.0-20.0	18.7 (29.7)*	1,750* sq.ft.	13,000 -- 20,000
Urban High Density	Apartment Houses Town Houses Condominiums	Larger scale development Minimum 15,000 sq.ft. lots	20.0-40.0	30.0	1,000 sq.ft.	20,000 -- 30,000

This second phase of expansion would accommodate approximately 20,000 people at the designated densities and with sufficient land for necessary public facilities and neighborhood commercial centers.

These two phases of expansion, coupled with a limited amount of development and redevelopment within the existing city, would accommodate over 50,000 additional people, a figure (as shown in Tables 18 and 19) compatible with the highest growth scenario's projections for the next twenty years.

As can be seen in Tables 20 and 21, the proposed plan provides for a balanced pattern of new development, both in terms of its location relative to the Central Business District and in terms of the mix of housing types provided. Overall, new population will be located to the east, west, and south of the existing city. However, during the first phase of expansion, somewhat more of the expected population increase is accommodated west and south of the city at higher densities than to the east.

Overall, the mix of residential development by type is well balanced with about 33% being allocated to urban low density, 39% to suburban density, 20% to medium rural density, and about 9% to low rural density development. Rough calculations indicate that this mix is appropriate on the basis of the current distribution of family incomes in El Centro.

Figure 17

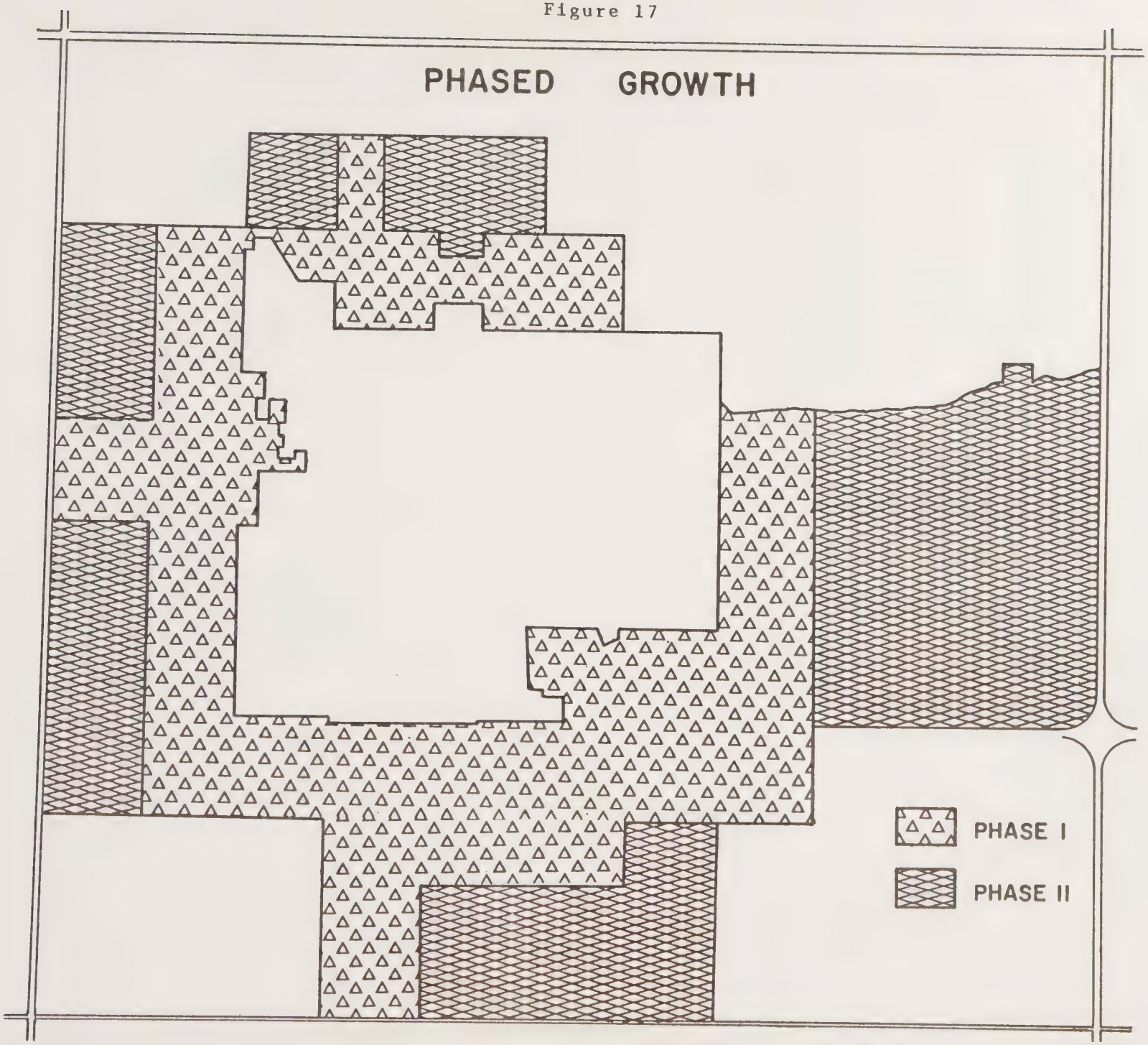


Table 18

PHASED EXPANSION	
Area	Additional Population Carrying Capacity
Within Existing City	1,440
Phase I	31,750
Phase II	19,700
Total	52,890

Table 19

POPULATION GROWTH OVER NEXT 20 YEARS	
Scenario	Population Increase
"No" or "slow" growth	0 - 3,000
"Moderate growth" (Historic trends)	9 -11,000
"Accelerated Growth"	20,000
"Explosive Growth"	30,000

Table 20

LOCATION OF NEW DEVELOPMENT Population Carrying Capacity*			
Area	Phase I (%)	Phase II (%)	Total (%)
"Western"	10,060 31.7%	3,535 18%	13,595 26.4%
"Eastern"	8,188 25.8%	11,775 59.7%	19,963 38.8%
"North"	4,256 13.1%		4,256 8.2%
"South of freeway"	9,246 29.1%	4,390 22.3%	13,636 26.5%
Total for area of influence	31,750 99.7%	19,700 100%	51,450 100%
"Existing City"	-----	-----	1,440
TOTAL	-----	-----	52,890

* Percentages based on column totals for area of influence and are rounded.

Table 21

TYPE OF NEW DEVELOPMENT			
Areas of Influence Type of Development	Percent of Areas Pop. carrying Capacity	Affordability* (Approx. min.) (Income reqmts.)	Approximate % of families at or above
7,200 sq.ft. min.**	32.5%	$20,000	54%
8,500 sq.ft. min.	39	25,000	43
10,000 sq.ft. min.	19.6	35,000	29
one acre	8.9	60,000	10

* Based on estimated construction and land costs and assuming that the proportion of income spent on housing varies from 25% for moderate income groups to 20% for higher income groups.

**Lots of not less than 6,000 sq. ft. may be allowed for governmentally administered home ownership assistance programs.

The proposed plans for the existing city and the area of influence represent a comprehensive growth management strategy toward the realization of the goals and objectives expressed by the community. The next section outlines a variety of techniques and mechanisms which could be used to implement the proposed plan and growth management strategy.

Special Note

It is suggested that the City adopt a "performance approach" to zoning and subdivision approval for some of the areas designated for standard single family residences. As long as a proposed development meets an overall density maximum of 4.5 units per gross acre, it could be approved even if portions of the project exceed this density. For example, a ten acre development could contain 45 standard lot units (7,200 square feet lots) or a mixture of 26 somewhat larger lot units (8,500 square feet lots) and 19 small lot units (6,000 square feet lots). Though the population carrying capacity of the entire development would remain the same, a substantial number of units would be affordable to moderate income families in the latter alternative.

IMPLEMENTING THE GENERAL PLAN THROUGH GROWTH MANAGEMENT

The management of community growth and development is not a new technique. Every step taken since the adoption of the first zoning ordinance and map has been an effort to direct the structural pattern of El Centro in a way that would bring about the best, most efficient and desireable living environment for its people. Zoning, however, has not always taken into account the timing and sequence of development and, in the final sense, has not been effective in indicating where or when services can be provided at levels essential to sound community living.

With the requirement that each community prepare a General Plan for its future growth and development, there was still the lack of an instrument to provide, other than in a general way, for the phasing and direction of growth. Expansions into new areas are often piecemeal, without the essential studies to determine what the costs of scattered development might be.

In many instances the zoning of the land reflects the decisions before there was a General Plan, and in most instances before the decision by the State Legislature that Zoning must be consistent with the General Plan. In the past, community leaders felt that the General Plan was a simple guide and therefore had no real meaning in law. This has all changed now with the adoption of the new State Laws which govern planning. The General Plan is considered critical in all land use decisions because it is the only real indication of what a community wants to be and how it is to attain its goals. Until very recently there was still a gap in the process. No ties between the

General Plan and timing of development existed. Now, however, Growth Management is to be the vehicle for implementing the General Plan proposals by creating timing and directional guidelines based on the ability of the community to absorb growth.

A Growth Management program is, therefore, an outgrowth of the efforts by community leaders, not to stop growth but to direct growth within prescribed boundaries. These boundaries are primarily determined by community capabilities to relate people and their basic needs and demands for public services and facilities along with other community considerations.

The Growth Management Plan is the bridge between planning and development. It is the evaluation system used to determine if the proposals submitted to the community can be accommodated within the fiscal abilities of the community without causing existing residents and commercial and industrial occupants to assume unreasonable tax burdens.

The Growth Management Plan is the best means designed to date to bring about logical implementation of the long range proposals of the General Plan. Zoning thereafter becomes the legal vehicle that permits development to proceed in those areas where growth management finds it appropriate and timely.

Factors in Growth Management

There must be a well "designed" General Plan which establishes the densities and intensities of land uses and an indication of the facilities that are required to meet the needs of the residents when they appear on the scene. Where facilities and services exist, they should be evaluated in terms of the potentials for expanded demands.

If there is a "short fall" there should be a determination of the ability of the individual services to expand to meet new demands and when this expansion will be possible, physically and financially. Only after the determination of the "when and how" should the zoning of the land be approved allowing the development to take place at the densities and purposes set forth in the General Plan.

Some of the most critical measurements of "community capability" to accommodate additional growth include:

1. Capacity of the school system to accommodate new students at the educational levels demanded

2. Capability of the sewerage system (lines and plant) to accept the additional sewerage from the proposed development (The need for the development or extension of either parts of the system should be viewed on a total community cost basis. The time needed for the planning and construction of the facilities should establish the basis for timing new development.)

3. Capability of the community to provide adequate potable water (the ability of the system to accept the anticipated new demands, both for residential and non-residential uses should be determined. The expansion of the system must not place undue burdens on existing facilities or residents.)

4. Police and fire protection is critical to both existing and future residents and businesses since the fire rates are established on the capabilities of the community to control dangerous situations. New development requiring the extension of essential services involving the employment of additional personnel or additional stations and equipment should be examined in terms of the impact and cost distribution that these costs would have on community taxes.

5. Streets and highways may not be immediately available to connect the proposed areas to the existing system. Development regulations under the Subdivision Map Act can require the developer to install off-site improvements. The costs of maintenance, however, falls on the general taxpayer and can, over a period of time, amount to a considerable financial burden.

A number of approaches and techniques have been developed to insure that future growth occurs in a manner consistent with the community's ability to accommodate new growth. Below is a partial list and description of these techniques:

Zoning: The pace and distribution of growth can be affected by two basic types of rezoning.

"Downzoning" is intended to reduce the ultimate holding capacity of an area, either in terms of the number of residences or the land available for business expansion. The objective is to reduce the pace of population or economic growth to a level consistent with the community's ability to absorb new people and businesses.

"Upzoning" is intended to increase the ultimate holding capacity of an area, and can serve to attract development which might otherwise have occured elsewhere. For example, the upzoning of central areas can help reduce growth pressures on undeveloped lands.

Moratoriums: A moratorium is intended to prevent further development for a relatively brief time in order to allow the completion of studies, plans, and the implementation of controls directed toward managing and accommodating growth.

Quotas: These limit the number of housing units which can be built during a period of time and are intended to reduce population growth and to ease the burden of such growth on public facilities and services.

Total Population Densities: A variety of techniques such as downzoning, moratoriums, and building quotas are used to insure a city's total population does not exceed some stipulated maximum. The maximum may be set and the basis of the city's ability to provide services, or on the basis of other, less tangible factors based on a desire to protect the health, safety and general welfare.

Land Banking: In this approach, land is actually bought by local government and then made available for private development under carefully specified conditions (such as consistency with the General Plan and the provision of some low-income housing) according to a timed-sequenced capital improvements program. This insures that future growth occurs at a pace compatible with the city's financial resources.

Development Rights Transfer: All landowners receive development rights in proportion to the amount of undeveloped land owned within an area, with no single landowner initially owning enough rights to develop all his land. Unexecuted rights are bought and sold on the free market (independent of land ownership) and tend to be transferred from rural areas to growth areas.

To develop a specific piece of property to the intensity of use designated on the General Plan, a developer must accumulate sufficient rights.

Timing and Sequencing Controls: These controls are intended to affect the distribution, as well as the pace of growth. A well-known application of such controls is Ramapo, New York. The controls were used in conjunction with a master plan and a capital improvements plan, to constrain growth around existing developed areas, to prevent hop-scotch development into agricultural areas, and to forestall development until necessary public services could be made available at reasonable costs.

Each of these approaches must be evaluated on a number of legal, economic, and social criteria. The legality of a particular approach is complicated, but tends to revolve around a number of basic questions: Is a regulation related to a "protectable goal" (such as health, safety, or general welfare)? Are equally situated landowners treated equally? Is the regulation "reasonable" in application as well as intent, and not discriminatory in its application? Is the regulation exclusionary or does it restrict free movement? Answers pertaining to each of the above are currently being evaluated through the judicial process.

Economic criteria include the costs of application and administration. For example, land banking can involve substantial public money. Also to be considered are the indirect effects of controls. Quotas, downzoning, and population ceilings can increase the costs of housing, and may accelarate the rate of growth as developers rush to beat impending deadlines (often at higher cost). Social criteria include issues of equity and exclusion and the political impact of governmental intervention.

A detailed review of the legal issues and other aspects of the above growth management tactics is beyond the scope of this element.* Furthermore, some of these tactics may not be applicable, in practice, at the local level (e.g., development rights transfer). Very recently, however, the City of Rialto, California, embarked on a growth management strategy involving a "point system" which seems to provide a reasonable model for smaller California cities to consider as a method for evaluating projects.

Development Rating System

In order to discourage scattered development patterns which are difficult to efficiently provide with public services, the City of Rialto development rating system was designed as a type of timing and sequencing control. The purpose of this rating system is stated most succinctly in the plan:**

> "Plans that offer something to the community will receive high priority, whereas proposals that appear to create strains on some or all of the basic services will have a low rating."

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* See bibliography at end of this section.

** City of Rialto Planning Department, Residential Growth Management Plan, mimeo, pp. 7, 1978

In the rating system, a project is evaluated on the basis of a maximum total of 100 points allocated among six categories. These categories reflect the degree of consistency with the General Plan, whether the project is contiguous to existing development, the need to extend utility services, the impact of the project on public facilities, the quality of the site plan, and the project's seniority in processing applications.

Shown in Table 22 is the rating system used in Rialto. The allocation of points among the six categories is shown, as are the rating systems used within each category. The allocation of points among the various categories on utilities and public services indicated a strong concern with these two issues. Obviously, alternative distributions of points (or new categories) could be devised to reflect different priorities (or different concerns) in other communities. In El Centro additional categories should be incorporated into the plan providing preference points for the provision of below market rate housing, additional non-mandatory energy conservation methods such as solar water heaters and development on non-prime agricultural soils.

TABLE 22
DEVELOPMENT RATING SYSTEM*
RESIDENTIAL GROWTH MANAGEMENT PLAN

1.	GENERAL PLAN & CONSISTENCY WITH APPLIED ZONING	MAX. 10 POINTS
	A. Project is consistent with the applied zoning and General Plan and furthers the goals, policies and objectives of the comprehensive General Plan.	(1-9)
	B. Project will eliminate or correct a known inconsistency between the applied zoning and the General Plan.	(3)
	C. Project meets the specific critical housing needs as noted in the Housing Element of the General Plan.	(3)
2.	PROJECT FALLS INTO THE FOLLOWING GEOGRAPHIC DEVELOPMENT ZONES	MAX. 20 POINTS
	A. Zone 1 - Project is adjacent to contiguous residential development (infilling).	(20)
	B. Zone 11- Project not contiguous to developed residential areas, but within ¼ mile of contiguous residential growth pattern.	(12)
	C. Zone 111-Project between ¼ and ½ mile of contiguous residential development.	(6)
	D. Zone IV- Project over ½ mile from contiguous residential development	(0)
3.	UTILITIES	MAX. 20 POINTS
	A. Sewer Main Line	MAX. 6 POINTS
	1. No extension of the main is required other than interior sewers through the project site.	(6)
	2. Extension of sewer main other than through the project is less than ¼ mile total length.	(4)
	3. Extension of sewer main other than through the project site will be less than ½ mile and more than ¼ mile in total length.	(1)

* Adapted from regulations prepared by City of Rialto, California.

4. Extension of sewer main other than through the project site will be more than ½ mile in length. (0)

B. Water (assume project pays all extension costs) MAX. 4 POINTS

1. Existing water mains adjoining site (4)

2. No existing lines at site (2)

3. For each type of water conserving device or technique used on project (developer to list) (1)

C. Drainage MAX. 4 POINTS

1. Project is consistent with Master Drainage Plan. (4)

2. Project is inconsistent with Master Drainage Plan. (-1)

D. Private Utilities MAX. 6 POINTS

1. Phone service lines are:

a. to the property (2)

b. within ¼ mile of the property (1)

2. Sufficiently sized electrical facilities are:

a. to the property (2)

b. within ¼ mile of the property (1)

c. conservation methods (developer to list) (1)

3. Sufficiently sized gas service lines are:

a. to the property (2)

b. within ¼ mile of the property (1)

c. conservation methods (developer to list) (1)

4. SERVICES MAX. 25 POINTS

A. Circulation MAX. 6 POINTS

1. Project would help relieve an existing circulation concern, as determined by the City. (4)

2. Project would widen at least one of its boundary streets where the street had already been widened on a continguous property. (2)

3. Project is less than ½ mile from mass transit or less than 1 mile from two major highways. (1)

4. Project is less than 1 mile from an existing or proposed shopping area containing a convenience store or supermarket. (1)

B. Schools — MAX. 6 POINTS

1. Project is less than:

   a. ½ mile from an elementary school (2)

   b. 1 mile from a junior or senior high school (2)

2. Project does not overload or add to overload of:

   a. an elementary school or junior high school (2)

   b. a senior high school (2)

C. Fire Department — MAX. 5 POINTS

1. To the closest home in the project by the fastest route possible, response time is less than 3 min. (3)

2. To the closest home in the project by the fastest route possible, response time is less than 5 min. (2)

3. Nearest Fire Station has sufficient personnel and equipment now or funded for the future. (1)

4. Project uses non-mandatory fire protection device(s). (1-3)

D. Police Department Service — MAX. 5 POINTS

1. Project site abuts existing development on at least 75% of perimeter. (2)

2. Project site abuts existing development between 25% and 75% of the perimeter. (1)

3. Project uses non-mandatory crime prevention devices or technique(s). (1-5)

E. Parks — MAX. 5 POINTS

1. Project is located within ½ mile of developed park. (4)

2. Project is located within 1 mile of a developed park. (2)

3. Project is located within ½ mile of an undeveloped park site or useable open space such as a school playground or designated open space. (2)

5. PROJECT SENIORITY AND ACTIVITY — MAX.15 POINTS

A. Seniority, as defined by the number of months since approval of the Tentative Map, based on 2 points a month not to exceed 6 points. (0-6)

B. Approved house plans (3)

C. Recordation of Final Map (6)

6. PROJECT CONSIDERATIONS (Land Plan Features) — MAX.10 POINTS

A. If the grading concept of the project produces round (natural appearing) land forms in lieu of constant slope (engineered) cut and fill banks (1)

B. If existing trees are retained, or additional trees added to the front yard area and/or City Parkway tree standards are exceeded by one or more trees per unit (1-2)

C. If, for the front yard or each single family lot and the exterior sideyard of each corner lot in the project, landscaping and/or a sprinkler system is provided (2-3)

D. If the majority of interior streets in the project are curved or contain a cul-de-sac (2-3)

E. The project falls into the Landscape Maintenance District (2)

F. For other proposed plans by the developer and approved by the City Staff (1-4)

RECAP:

	TOTAL POINTS
1. General Plan	10
2. Priority Building Zones	20
3. Utilities	20
4. Services	25
5. Project Seniority and Activity	15
6. Project Considerations	10
TOTAL	100

The Rialto Residential Growth Management establishes a priority system and maximum number of housing allocations per year, as well as a graduated fee schedule based on the projects development rating system total. However, currently the housing situation in El Centro does not appear to warrant establishment of a housing allocation threshold. Should a housing boombust situation become apparent in El Centro, similar type of controls could be enacted.

The rationale for a sliding development fee in Rialto is based on two concepts:

1. A low scoring development has received such a rating because of its relatively poor location to existing services and/or by its potential to tax these services.

2. The construction of non-contiguous developments will be more expensive to provide long range municipal services. These factors are equally applicable to El Centro, and it is recommended that a reasonable and responsible sliding development fee be carefully adapted to local circumstances in the near future.

The Zoning Ordinance and Map

Implementation of the General Plan will require ordinance amendments to provide for some new zones, to regulate density and building height according to the Plan's agreed-upon standards, and to state precise standards for commercial and industrial development.

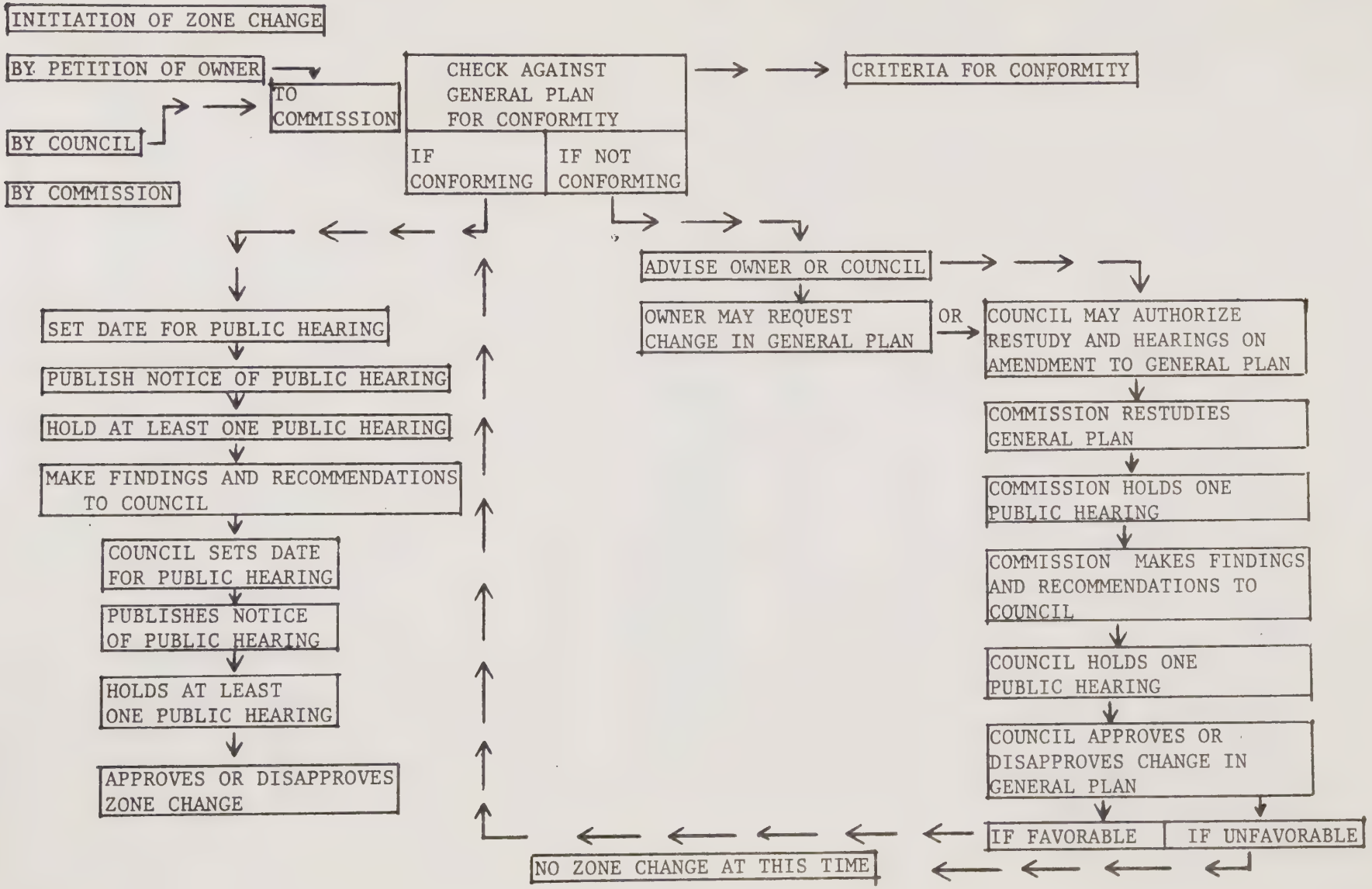
The machinery through which zone changes can be related to the General Plan is illustrated in Figure 18. Criteria for ascertaining the conformity of a proposed change with the General Plan can be set forth, giving applicant, administrator, and Planning Commission a common point of reference. This procedure will subject the Plan to the continual review which is essential to its validity.

Recommendations for Zoning Ordinance revisions have already been submitted to the City by the Consultants.

The Subdivision Ordinance

The Subdivision Ordinance will continue to be of utmost importance in molding the city's future development. Subdivision regulations have an important role in implementing the General Plan by insuring that street dedications are properly located and of adequate width, that lots are of appropriate size and shape for their function, and that school and park sites are provided. Subdivision Ordinance revisions have also been submitted by the Consultants. Their intent is to relate the Subdivision Ordinance very closely to the Zoning Ordinance and the General Plan.

FIGURE 18
ZONE CHANGE PROCEDURE AS IT RELATES TO THE GENERAL PLAN



Capital Improvements Program

The Capital Improvement Program is a listing, evaluation, and priority ranking of all projects needed by the City over the next several years, and the State Conservation and Planning Act assigns to the Planning Commission the task of developing the Capital Improvements Program.*

It is through the Capital Improvements Program that expansion of public facilities shown on the General Plan are scheduled and prioritized so as to provide for the orderly and economical expansion of the city. The Capital Improvements Program relates the timing and location of necessary facilities to the city's ability to finance such facilities, and provides a yardstick for the approval of residential development plans.

Periodic Review of the General Plan

Periodic basic review of the General Plan should occur every five years or so. In addition to the constant use of the Plan in reference to particular zone changes and public and private improvements, there should be an opportunity for comprehensive review to make sure the objectives, assumptions, and standards on which the Plan rests are still valid. Furthermore, the Plan must keep in step with technological developments, with plans and events in nearby communities and in the region. This is particularly true given the potential impact of geothermal development which may materialize in just a few years. And since the General Plan must express the goals of the community, periodic review is an opportunity for participation and expression by an informed public, helping to keep the Plan up to date.

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* California Government Code, Sections 65549-51

THE GENERAL PLAN AMENDMENTS AS ENVIRONMENTAL GUIDELINES

Within the elements of this General Plan the basis for each recommended revision of the previous plan is discussed. The implementation of these changes, through the processes of growth management and rezoning, will involve more detailed analysis of the individual conditions within the specific areas affected. The timing and sequencing of future developments through these processes, will aid in reducing the adverse impacts of such actions upon the environment, and will help to reduce the wasteful use of land and natural resources.

The California Environmental Quality Act (California Public Resources Code Section 21000 et. seq.) requires that all actions potentially causing physical, social and/or economic impact upon the existing environment, be subject to an assessment* in order to determine the type of impact that might occur. An environmental impact report may subsequently be required, which presents a more intensive analysis of the type and extent of the impact to be caused by the project.

Since the City views its potential for growth with deep concern, the General Plan and Map, and the zoning changes to bring the Plan and the zoning ordinance into conformance, should be considered an overall, general environmental assessment. As such, this plan shall be utilized as a guide for broad governmental policies involving public expenditures for capital improvements, and for all private development.

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* The following Environmental Checklist is utilized in making this initial assessment.

ENVIRONMENTAL CHECKLIST FORM
(To be completed by Lead Agency)

I. BACKGROUND

1. Name of Proponent _____
2. Address and Phone Number of Proponent
_____
_____
_____
3. Date Checklist Submitted _____
4. Agency Requiring Checklist _____
5. Name of Proposal and Brief Description _____
_____
_____

II. ENVIRONMENTAL IMPACTS
(Explanations of all "yes," "maybe," and "not applicable" (N.A.) answers are required on attached sheets.)

	Yes	Maybe	No	N.A.
1. Earth. Will the proposal result in:				
a. Unstable earth conditions or in changes in geologic substructures?	___	_____	__	_____
b. Disruptions, displacements, compaction or overcovering of the soil?	___	_____	__	_____
c. Change in topography or ground surface relief features?	___	_____	__	_____
d. The destruction, covering or modification of any unique geologic or physical features?	___	_____	__	_____
e. Any increase in wind or water erosion of soils, either on or off the site?	___	_____	__	_____
f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?	___	_____	__	_____

	Yes	Maybe	No	N.A.
2. Air. Will the proposal result in:				
a. Air emissions or deterioration of ambient air quality?	___	_____	___	_____
b. The creation of objectionable odors?	___	_____	___	_____
c. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?	___	_____	___	_____
3. Water. Will the proposal result in:				
a. Changes in currents, or the course or direction of water movements, in either maring or fresh waters?	___	_____	___	_____
b. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?	___	_____	___	_____
c. Alterations to the course or flow of flood waters?	___	_____	___	_____
d. Change in the amount of surface water in any water body?	___	_____	___	_____
e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?	___	_____	___	_____
f. Alteration of the direction or rate of flow of ground waters?	___	_____	___	_____
g. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	___	_____	___	_____
h. Reduction in the amount of water otherwise available for public water supplies?	___	_____	___	_____
4. Plant Life. Will the proposal result in:				
a. Change in the diversity of species, or numbers of any species of plants (including trees, shrubs, grass, crops, microflora and aquatic plants)?	___	_____	___	_____

	Yes	Maybe	No	N.A.
b. Reduction of the numbers of any unique, rare or endangered species of plants?	___	_____	___	_____
c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	___	_____	___	_____
d. Reduction in acreage of any agricultural crop?	___	_____	___	_____
5. Animal Life. Will the proposal result in:				
a. Changes in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna)?	___	_____	___	_____
b. Reduction of the numbers of any unique, rare or endangered species of animals?	___	_____	___	_____
c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	___	_____	___	_____
d. Deterioration to existing fish or wildlife habitat?	___	_____	___	_____
6. Noise. Will the proposal increase existing noise levels?	___	_____	___	_____
7. Light and Glare. Will the proposal produce new light or glare?	___	_____	___	_____
8. Land Use. Will the proposal result in:				
a. The alteration of the present or planned land use of an area?	___	_____	___	_____
b. Conflict with the objectives and principles of the General Plan Land Use Element?	___	_____	___	_____
c. Conflict with the present zoning ordinance?	___	_____	___	_____
9. Natural Resources. Will the proposal result in:				
a. Increase in the rate of use of any natural resources?	___	_____	___	_____
b. Depletion of any nonrenewable natural resource?	___	_____	___	_____

	Yes	Maybe	No	N.A.
10. Risk of Upset. Does the proposal involve a risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?	___	___	___	___
11. Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?	___	___	___	___
12. Housing. Will the proposal affect existing housing, or create a demand for additional housing?	___	___	___	___
13. Transportation/Circulation. Will the proposal result in:	___	___	___	___
a. Generation of additional vehicular movement?	___	___	___	___
b. Effects on existing parking facilities, or demand for new parking?	___	___	___	___
c. Impact upon existing transportation systems?	___	___	___	___
d. Alterations to present patterns of circulation or movement of people and/or goods?	___	___	___	___
e. Alterations to waterborne, rail or air traffic?	___	___	___	___
f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?	___	___	___	___
14. Public Services. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:				
a. Fire protection?	___	___	___	___
b. Police protection?	___	___	___	___
c. Schools?	___	___	___	___
d. Parks or other recreational facilities?	___	___	___	___

	Yes	Maybe	No	N.A.
e. Maintenance of public facilities, including roads?	___	___	___	___
f. Other governmental services?	___	___	___	___
15. Energy. Will the proposal result in:				
a. Use of substantial amounts of energy for heating and cooling?	___	___	___	___
b. New demand upon non-renewable energy resources?	___	___	___	___
c. Substantial use of electric lighting?	___	___	___	___
d. Increased use of any non-recyclable resources, or waste materials such as plastics, packaging materials, etc.?	___	___	___	___
16. Utilities. Will the proposal result in a need for new systems, or alterations to the following utilities:				
a. Power or natural gas?	___	___	___	___
b. Communications systems?	___	___	___	___
c. Water?	___	___	___	___
d. Sewer or septic tanks?	___	___	___	___
e. Storm water drainage?	___	___	___	___
f. Solid waste and disposal?	___	___	___	___
17. Human Health. Will the proposal result in the creation of any health hazard or potential health hazard (excluding mental health)?	___	___	___	___
18. Aesthetics. Will the proposal result in the obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?	___	___	___	___
19. Recreation. Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?	___	___	___	___

	Yes	Maybe	No	N.A.
20. Archeological/Historical. Will the proposal result in an alteration of a significant archeological or historical site, structure, object or building?	___	_____	___	_____
21. Mandatory Findings of Significance				
a. Does the project have the potential to degrade the quality of the environment, or curtail the diversity in the environment?	___	_____	___	_____
b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)	___	_____	___	_____
c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)	___	_____	___	_____
d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	___	_____	___	_____

III. DISCUSSION OF ENVIRONMENTAL EVALUATION

IV. DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project.

I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

_____ _____

Date Signature

_____

For

Present:

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HOUSING

The Housing Element contains all of the proposed recommendations as submitted by the State Department of Housing and Community Development pursuant to their review of December 19, 1979.

All general plans, as required by California State law, must contain a housing element which adopts comprehensive goals, policies and priorities. As a plan of action, the housing element consists of standards and plans for the improvement of housing and provisions for adequate new housing sites.

Recent housing element guidelines also endeavor to more closely coordinate local, state and federal housing policies and programs in addressing housing problems. Because housing need is a function of the regional housing markets, local government should collaborate with other government agencies not only to address the local general market area housing needs, but to share in the collective responsibility for making adequate housing provisions for people in the region.

However, government's role in the housing market is limited: private enterprise, in response to the availability of financing and local supply and demand, predominately influences the quantity, quality, type and price of housing built. In addition, recent housing market conditions have drastically escalated housing prices and interest rates, thereby limiting a large segment of the population to use of the existing housing stock, be it good or poor in quality. Government's primary housing participation has been limited to public housing or publically assisted housing, a very small segment of the total housing inventory. Therefore, government should embark on a collaborative effort to induce the private sector to provide the widest possible variety of housing types and prices. The scope of the housing policy must also include a three year fair share

allocation plan which covers market rate as well as non-market rate housing needs within the locality's jurisdiction.

This amendment to the current housing element has been divided into two major sections. If the element is to effectively address the housing needs of all economic segments of the community, the dimensions and character of the need must first be ascertained. The first section of this housing element will determine the general need for market rate housing over a five year period by analyzing historical and anticipated population growth, employment opportunities, development trends, housing preferences and household formations. Immediate housing needs will also be examined in terms of affordability, housing age, quality, and overcrowding. In addition, particular attention will be focused on the special needs of large families, minority households, the elderly, the handicapped and families below poverty level. Since a satisfying environment is a primary objective, neighborhood quality will also be analyzed in terms of environmental factors, the quality of public improvement and facilities. In view of the city's growth potential, vacant residential land will be assessed, by neighborhood, in order to ascertain the carrying capacity of the land zoned for various densities within the city's existing boundaries. Future neighborhoods, in the city's area of influence, delimited by growth pressures, will also be evaluated as to their potential for new housing development.

Once the dimension and character of the housing need has been established, the second part of this housing element will propose a housing program with specific goals, policies and priorities directed toward housing conservation and rehabilitation. Specific and general

implementation tools will be examined in order to establish plans of action to ameliorate housing problems and to satisfy projected housing needs.

HOUSING DEVELOPMENT TRENDS

Based on building permit data, the number of housing units in El Centro has increased by 1008 units since 1972, an average annual construction volume of 205 units per year. 1976 marked the greatest number of total housing units built in one year, 303 dwelling units. For the past five years, single family construction added a total of 541 units to the city's housing supply and apartment construction contributed another 467 units. Table 24 summarized new construction volume by year and type for the period 1960-77.

The current inventory of housing for the city as a whole breaks down as follows:

Table 23: Housing Inventory Estimate

Type	1972 (%)	Building Permit 1972-77	1977	Demo*	1977 Est.	%
Single Family	4599 (69.1%)	541	5140	194	4946	65.1
Duplex	244 (3.7%)	15	259	-	259	3.4
Apts.	1341 (20.1%)	467	1808	-	1808	23.8
Trailer	475 (7.1%)	-	585	-	585	7.7
Total	6659	1023	7792	194	7594**	

Net Change = 935 units

* Assumes all demos are S.F.

** Special 1977 Census put total at 7527 or 69 units less. Some authorized units may not have been built or the census may have missed a small number of units.

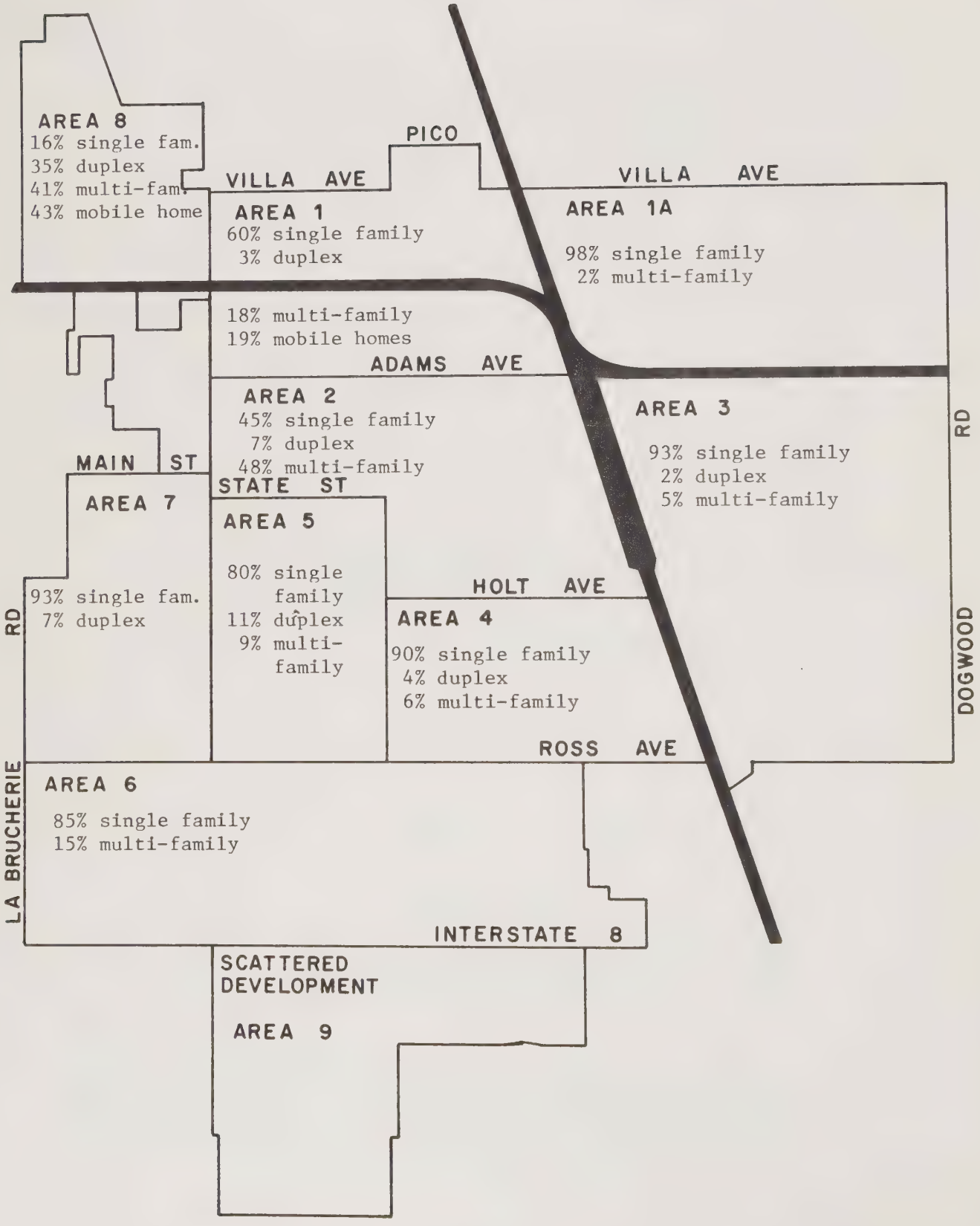
Table 24

New Residential Construction, City of El Centro, 1960-77
(New Units Authorized)

	Single Family	Apartment	Total
1960	41	---	41
1961	82	---	82
1962	122	69	191
1963	113	8	121
1964	121	162	283
1965	122	54	176
1966	51	4	55
1967	62	203	265
1968	55	26	81
1969	31	12	43
1970	74	49	123
1971	32	125	157
1972	167	16	183
1973	32	67	99
1974	17	16	33
1975	67	56	123
1976	166	129	295
(July) 1977	92	183	275

Source: City of El Centro

Figure 19
Type and Distribution of Housing
City of El Centro



Clearly, El Centro remains substantially a single family residential community despite the recent strong growth in the number of apartments. Single family residences are rather evenly distributed throughout the community while quite a different pattern exists for multiple-family units and trailers. Multiple units tend to be concentrated in the central and north portions of the city and in small groupings along major streets. Trailer units or mobile homes are located in only two planning areas, at the extreme northern and northwestern edges of the city.

Very recent single family and apartment development has been located primarily on the western side of the city due to the availability of large areas of vacant land.

In 1977 a single family and apartment survey was conducted by the City of El Centro to identify recent growth and mobility trends. The single family survey revealed that in-migration constituted 50% of the demand for recently constructed detached homes. First home ownership was dependent on the availability of moderately priced homes, proximity to work and the desirability of the area.

In-migration generated 64% of the demand for apartments as indicated in the apartment growth trend survey. In-migration from other California counties was greater than either from other areas in Imperial County or from out of State. In-migration was largely dependent upon employment opportunities in El Centro. However, 36% of these migrants work in other areas of Imperial County. A high mobility was characteristic of apartment residents. Only 36% of the apartment residents surveyed lived previously in El Centro and only 39% plan to remain permanently. This

fluctuating migration pattern seems to have been relatively balanced and has apparently resulted in moderate growth rather than dramatic gains or losses in population. Apartment turnovers were also frequent as only 3% definitely planned to remain living in their apartment for more than three years and 38% hoped to switch directly to homeownership.

El Centro's role as a regional residential center serving a major portion of the Valley is an important finding of these two surveys. Economic growth outside El Centro and its immediate area of influence may increase the local demand for housing and swell the city's population even if local economic growth is not strong. People working some distance away may still choose to live in El Centro.

Between 1970 and 1975, Imperial County's growth rate took a dramatic upswing increasing to a level almost four times the rate of the previous decade. As shown in Table 25 , only Calexico attracted a greater portion of these new residents than El Centro.* (These figures do not include population growth in adjacent areas outside current city limits. Such figures are not available but discussions with local planners indicated that strong growth in El Centro's area of influence has occurred as well.)

Historically El Centro's population growth rate has been 2% per year. However, projecting population growth and housing needs over the next five years involved a number of uncertainties. There are a number of potential factors which may accelerate population growth above historic

---

* The growth of Calexico is a result of a unique set of circumstances. It is located on the Mexican border and is immediately adjacent to the rapidly growing city of Mexicali.

Table 25

Population Growth 1950-1979

	1979	1975	1970	1960	1950
Imperial County	90,900	83,676	74,492	72,105	65,516
City of EL Centro	24,350	21,295	19,272	16,811	12,590
City of Brawley	14,150	14,010	13,746	12,703	11,922
City of Calexico	13,550	13,020	10,625	7,992	6,443
City of Holtville	4,570	4,345	3,496	3,080	2,472
City of Imperial	3,364	3,213	3,094	2,658	1,759
City of Calipatria	2,510	2,074	1,824	1,848	1,428
City of Westmorland	1,570	1,417	1,175	1,404	1,010

Table 26

Rate of Population Change 1950-1979

	*Numerical Change			Percent Change			Annual Rate of Inc.
	1970-79	1960-70	1950-60	1970-79	1960-70	1950-60	
Imperial County	16,408	2,387	9,589	22.0%	3.3%	15.3%	2.4%
City of El Centro	5,078	2,461	4,221	26.3.%	14.6%	33.5%	2.9%
City of Brawley	404	1,043	781	2.9%	8.2%	6.6%	.33%
City of Calexico	2,925	2,633	1,549	27,5%	33.0%	24.0%	3.1%
City of Holtville	1,074	416	608	30.7%	13.5%	24.0%	3.4%
City of Imperial	270	436	899	8.7%	16.4%	51.1%	.97%
City of Calipatria	686	24	420	37.6%	1.3%	29.4%	4.2%
City of Westmorland	395	229	394	33.6%	19.5%	39.0%	3.7%

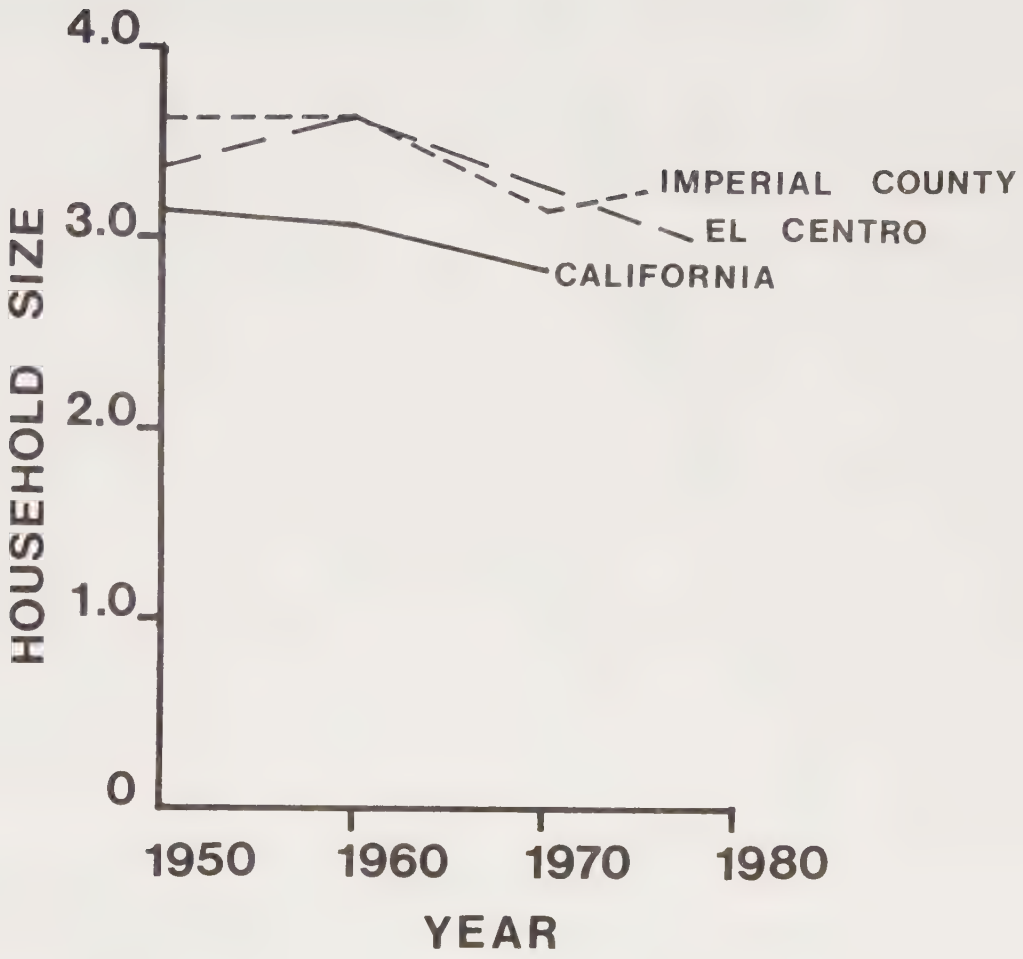
City of El Centro - Population Projections	1985	1990
Based on the Annual Rate of Increase (2.9%)	27,203	30,498

Sources: U.S. Bureau of Census
Department of Finance
City of El Centro Planning Staff

trends (for example, new industries locating within the area, such as geothermal plants may need and attract a larger labor pool.) Even if future population levels could be predicated with certainty, the relationship between the number of people and number of housing units required may change as a result of demographic, social and economic shifts. Preferences and attitudes toward housing change as well. Generally, there has been a downward trend in the average number of people per housing unit for both the nation and the state. However, as indicated in Figure 20, the trend in the Imperial Valley has been mixed, rising and falling over the last twenty-five years. Average household size in El Centro has remained relatively fixed since 1970. However, given the long-run nature of national and statewide trends average household size for El Centro will probably continue to decline slowly.

FIGURE 20

AVERAGE HOUSEHOLD SIZE



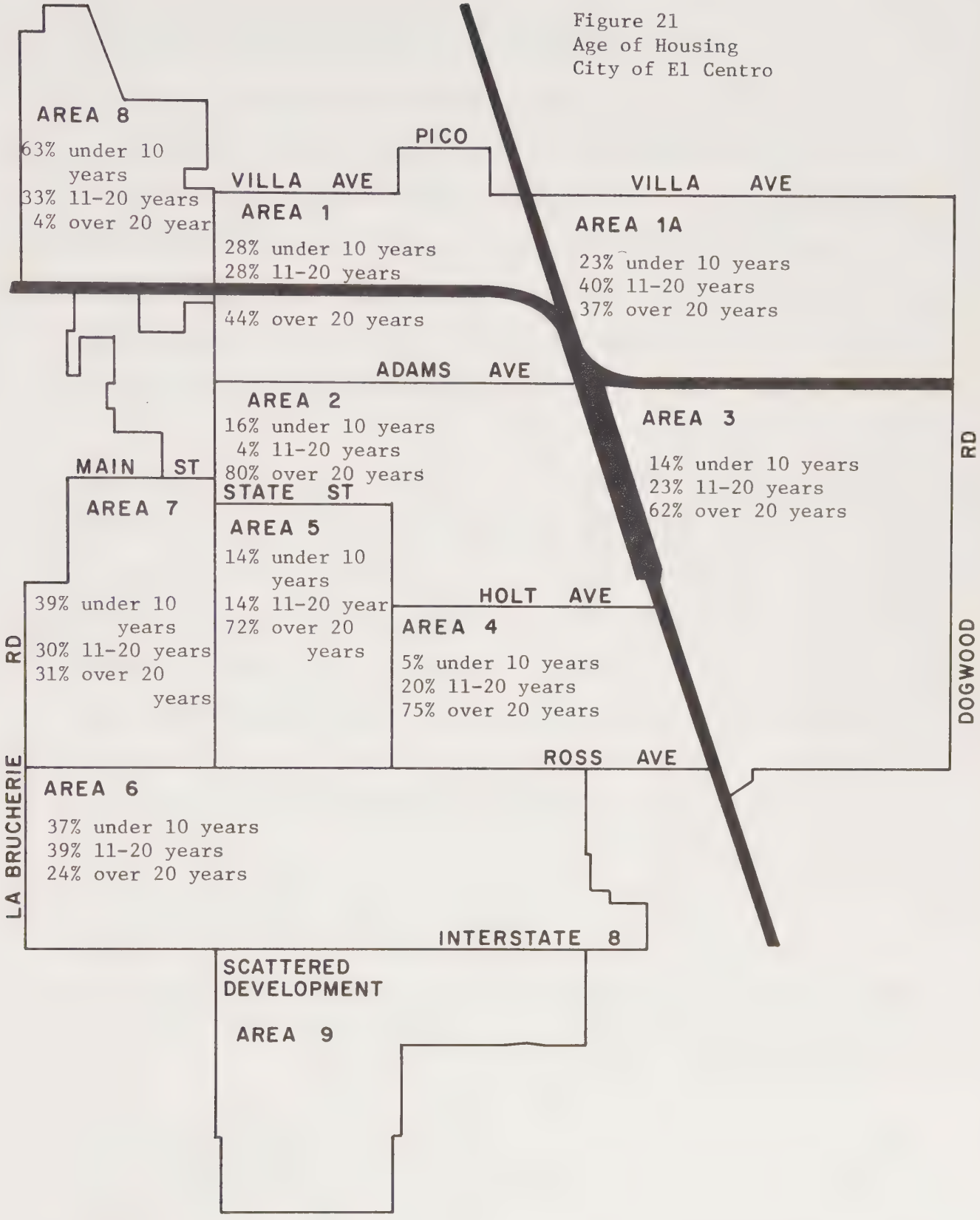
IMMEDIATE HOUSING NEEDS

In 1977, the range of assessed house value for all of the planning areas was between $10,000 and $85,000, and the overall average monthly rate was $159. The average gross household income in 1977 was approximately $22,000.* Assuming that 25% of a household's income is spent on housing, the average family in El Centro could easily afford an apartment in most parts of the city as well as a moderately priced house. But, due to rising land and construction costs which inflate new housing prices, moderately priced homes are only available within the existing housing stock. Since 1972, the supply of housing units has been slightly lower than the demand. According to SCAG's Regional Housing Allocation Model, adopted in 1978, a vacancy rate of 6.6.% exists for all owner occupied units and a vacancy rate of 2.07% for rented units confirms an immediate need for additional housing.

Due to the dwindling housing supply, the existing housing stock must be maintained to provide the maximum amount of standard dwelling units. According to SCAG's Regional Housing Model, out of the total housing units available in El Centro approximately 945 units or 13% are suitable for rehabilitation. SCAG identified 482 units as being beyond rehabilitation. However, about half of all the housing units in the city are 20 years old or older, indicating that the actural number of structures needing rehabilitation could be substantially higher.

Since the principle source of demographic data is from the 1970 census and current data reflects the entire city, only rough generalizations may be made about the present socio-economic composition of the city.

*This figure, provided by the Marketing Economics Institute, appears somewhat high and will be difficult to verify prior to the 1980 census. A more representative figure of the area is the median income for the County, $12,417 (per 1978 joint returns as reported by the California Franchise Tax Board.) El Centro's trend has been historically about 17.2% above the County's: an approximate current median of $14,553.


Figure 21
Age of Housing
City of El Centro
AREA 8
63% under 10 years
33% 11-20 years
4% over 20 year
PICO
VILLA AVE
VILLA AVE
AREA 1
28% under 10 years
28% 11-20 years
44% over 20 years
AREA 1A
23% under 10 years
40% 11-20 years
37% over 20 years
ADAMS AVE
AREA 2
16% under 10 years
4% 11-20 years
80% over 20 years
AREA 3
14% under 10 years
23% 11-20 years
62% over 20 years
RD
MAIN ST
STATE ST
AREA 7
39% under 10 years
30% 11-20 years
31% over 20 years
AREA 5
14% under 10 years
14% 11-20 year
72% over 20 years
HOLT AVE
AREA 4
5% under 10 years
20% 11-20 years
75% over 20 years
DOGWOOD
RD
ROSS AVE
LA BRUCHERIE
AREA 6
37% under 10 years
39% 11-20 years
24% over 20 years
INTERSTATE 8
SCATTERED DEVELOPMENT
AREA 9

No reliable figures are available to determine the extent of overcrowding in El Centro. However, the 1970 census reports 368 rental and 397 owner occupied units with 1.01 or more persons per room. (A unit with over 1.01 persons per room is considered overcrowded.)

Generalized household income data for 1970 shows that 38% of the city's population has an annual gross income below $8000. (In comparison, Imperial County has 44.6% of the total population with an annual gross income below $8000.)* Since only speculative guesses could distribute these figures among each planning area and various minority groups, these figures act as a gauge for the city's income characteristics. Past studies and surveys indicate that there is a high concentration of families with low income and incomes below the poverty level residing in planning areas 2,3, and 8. The city plans to provide 500 households with low cost housing or approximately 30% of the actural housing need. Generalized income data from 1970 showed that approximately 18% of the households had an annual gross income less than $5000.* These figures are closely correlated with the figures for the estimated additional low income households needing assistance. Low cost housing in the form of public housing or publically assisted housing will need to be provided for these households. Proposed city housing programs will be discussed in-depth in a later section.

In the next few years, El Centro will need to increase its supply of market rate housing as sell as lower cost housing. If the dwelling units needing rehabilitation are allowed to continue to deteriorate, the need for additional standard housing units will become greater.

* The 1980 census figures are anticipated to be available by January 1981 and will give a more precise picture.

FIVE YEAR PROJECTIONS OF MARKET RATE HOUSING 1979-1984

Assuming that population continues to increase at the current rate of 2% per year, and that average household size remains constant, about 726 additional housing units will be needed over the next five years. A greater number of units may be required if population growth exceeds current trends and/or if household size declines. Shown on Table 27 are estimates of projected needs over the next five years on the basis of the probable range of growth rates and household sizes.

Table 27

Growth Rate (%/yr.)	Approximate Population Increase	Range of Housing Units Needed*	Average Yearly Increase
"No/slow" (0)	0	0- 333	0- 67
"Moderate" (2)	2,200	726- 758	145-152
"Accelerated" (3.8)	4,500	1485-1551	297-310
"Explosive" (5.5)	6,800	2244-2345	449-469

* Low estimate assumes that average household size remains fixed at present value of 3.03. High estimate assumes average household size declines to 2.90.

However, it is believed that explosive growth is not likely to occur within the next five years. Geothermal development is likely to proceed slowly until the extent of both the Valley's resources and their associated problems are more fully known.

It is difficult to specify exactly the appropriate mix of additional housing units needed over the next five years. The mix of single family houses and multiple units is related to the incomes, family structures, preferences, and other characteristics of the incoming families, as well as the dynamics of household formations and population movements for existing residents. Even if an accurate housing selection model could

be formulated, up-to-date demographic information is not available and information about future population can only be regarded as speculative.

Furthermore, the costs of new housing construction have risen sharply over the last several years and are likely to continue to increase. To make a complete forecast of the appropriate mix of new housing units one must not only examine the demand side of the equation, the characteristics of incoming families, but must also examine the supply side, the future costs of housing construction.

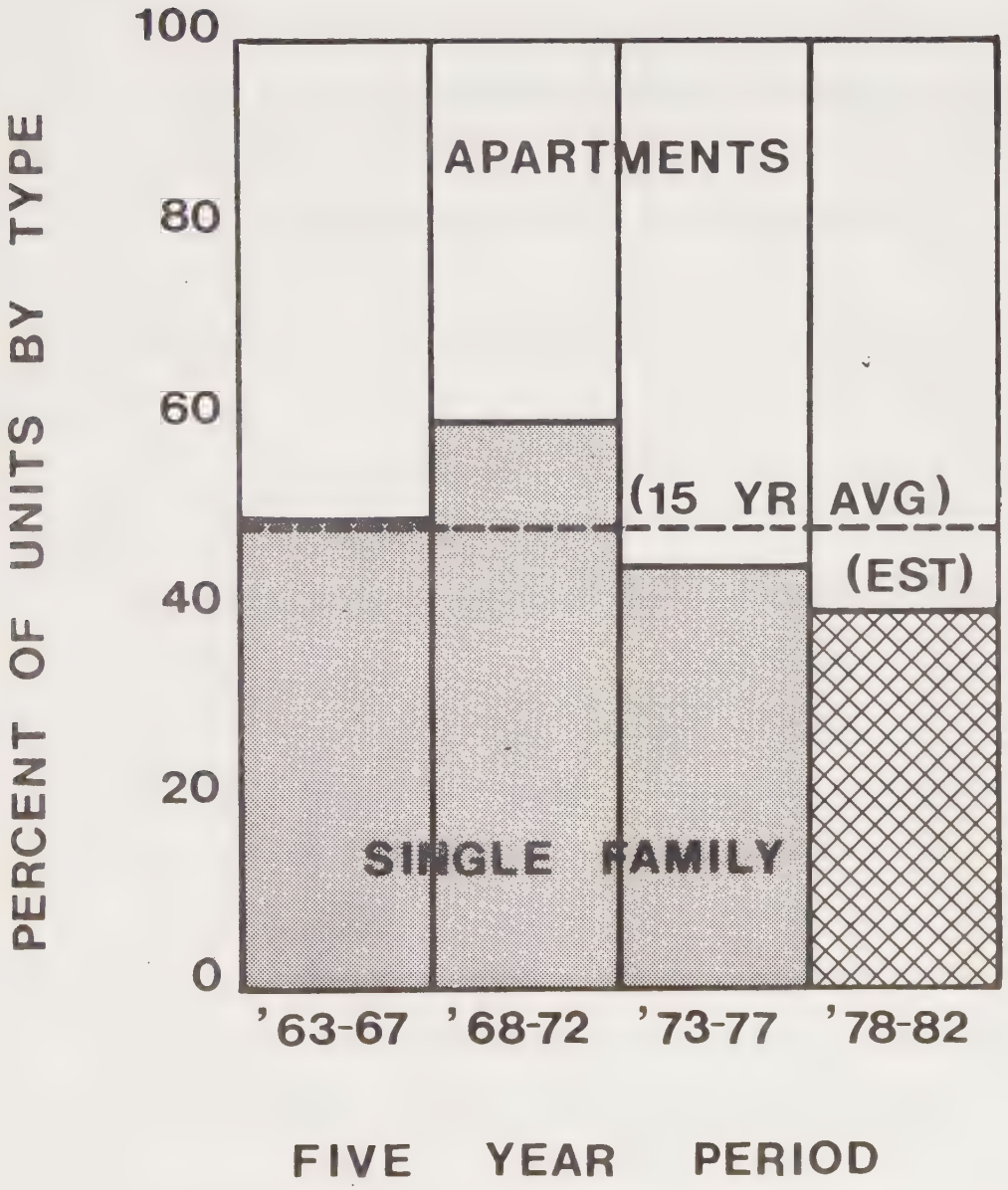
In sum, the housing market is a complex one: people move from apartments to houses or from houses to other houses according to their needs and circumstances, constrained by the variety and price structure supplied by the private market. Simultaneously, the private market attempts to anticipate what people want and can afford, in turn affecting the variety of housing units that actually become available.

A complete analysis of the El Centro housing market is beyond the scope of this housing element. However, market trends over the last several years can be analyzed to provide some reasonable estimates of future market changes.

As can be seen in Figure 22, the mix of housing units constructed in the three most recent five-year periods has varied somewhat. The proportion of single family units has ranged from about 45% to about 60%, with the lowest figure occurring most recently in the period 1973-77. Over the entire fifteen year period shown the proportions of apartments and single family houses has been roughly equal. The large proportion of single family houses built in the period 1968-72 reflected a fairly unique set of circumstances related to housing financing and a

FIGURE 22

RESIDENTIAL CONSTRUCTION



rapid increase in family incomes. It is unlikely that these conditions will return in the near future. Condominium development may emerge as an alternate form of ownership during this era of expensive housing construction. Inflated market rate housing prices which limit single family ownership, coupled with a general trend toward childless or single person households implies that a greater proportion of apartment units will be needed in the future, at least over the next five years.

At present, the availability of apartments is low with a recent survey putting the vacancy rate at 2.07% Some expansion (perhaps as many as 100 units) would be justified even without significant population growth.

The above discussion neglects the question of trailers and mobile homes. Between 1972 and 1977, the number of mobile homes, as a proportion of the total number of housing units available, increased from 7% to 9%. (Mobile homes accounted for about 3% of the city's dwelling units in 1960.) Between 1972 and 1977, mobile homes accounted for about 10% of the units added to the city's housing stock.

Mobile homes have become an important feature throughout the county. For example, in unincorporated areas of the county the number of mobile homes added per year has far outstripped the number of "traditional homes" (777 mobile homes vs. 175 homes for the period 1973-76).

A greater role for mobile homes in providing inexpensive housing can be expected in the future, particularly if construction costs continue to escalate faster than family incomes. Mobile homes may also

become more important if significant geothermal development takes place. Studies indicate that many of the jobs associated with the early stages of development will be filled with specially skilled people brought into the Valley temporarily. If the supply of apartments is limited, mobile homes may be the most feasible approach for housing these people.

The following is an estimate of the mix of housing units required over the next five years. This estimate assumes that mobile homes will account for 15% of the new units required, a moderate increase over historic trends. Apartments will account for 60% of the remaining units, a figure slightly higher than that of the most recent five-year period (56%).

Table 28

Five Year Projections of Housing Units by Type

Type	Percent
Trailers, Mobile Homes	15
Apartments*	47
Single Family	38
Total	100

*includes condominiums

Shown in Table 29 are estimates of yearly additions to the housing stock over the next five years.

Table 29

Source of Need	Approximate Number of All Units
Population Growth	152*
Replacement	96**
Reduce Overcrowding	56***
Total	304

* "moderate" growth scenario
** 482 substandard units replaced over 5 years
*** To increase overall vacancy rate of existing stock to approximately 4%

The construction industry should be able to supply projected needs in housing units.* Construction has averaged about 200 units a year since 1972, an activity level sufficient to accommodate moderate growth over the next five years. In the peak year of 1976, the local industry was able to supply more than 300 units.

* Assuming necessary financing can be obtained in an often uncertain and fluctuating money market.

MARKET CONSTRAINTS AND GOVERNMENT CONSTRAINTS

The cost factors for the development of housing make it unfeasible for the average-income person to purchase homes. Currently, costs for constructing an average new (1200 sq. ft.) home is, on the average, about $35,000 or $29 per square feet. Additional costs for an average city lot (60'x 120') and the provision of roadways, public facilities, land improvements and administrative costs amount to $20,000. Add the developers profit factor (5%), and the cost for an average new home becomes $57,750 which is beyond the affordable capabilities of the average person. The developer also loses due to the lack of sales or the time lapsing sales that he is forced to reduce his margin of profit in order to sell the house.

Incentives which the city could apply to reduce costs and thus make housing affordable to low and moderate income households are as follow: the waiving of fees (i.e., sewer and water capacity, drainage, park fees, etc.) for the developer with the requirement that these savings be passed on to the consumer; the enforcement of resale controls through trust deeds; and the issuance of density bonuses.

Government factors which further aggrevate the private and public housing market include the availability of: 1. low mortgage rates; 2. federal subsidy financing and associated programs; and 3, prompt service from the Department of Housing and Urban Development. Federal mortgage limitations and its related high interest rates pose another grave factor.

INDIVIDUAL PLANNING AREAS

In order to effectively study the physical, social and economic elements, the city has been subdivided into nine areas which have a reasonalble degree of homogeniety in terms of age, building conditions and land use. The following analysis will examine the physical and social composition, environmental and maintenance quality in each planning area. This analysis provides a basis for identifying immediate housing needs.

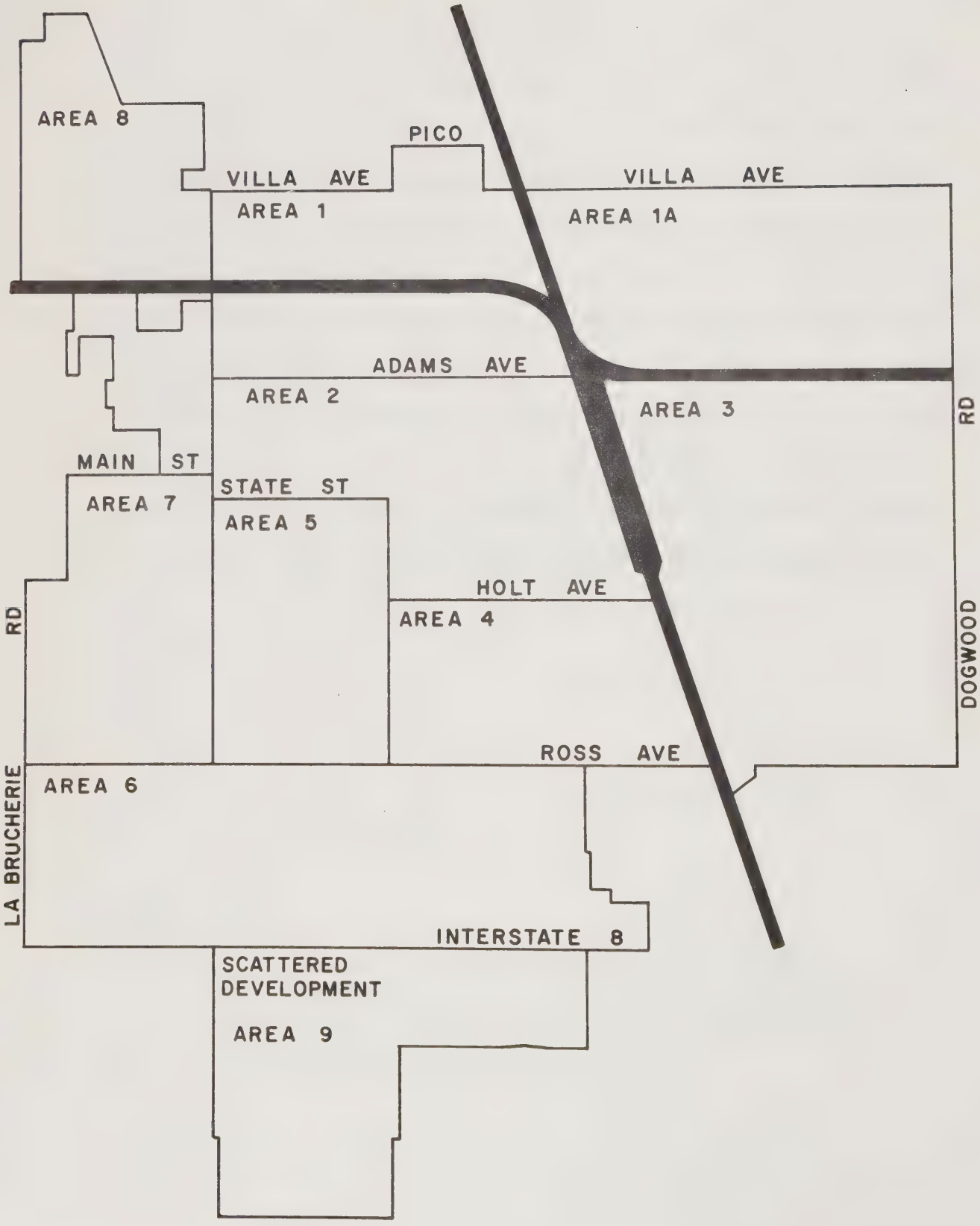
Table 24 contains the range of housing values and the rent range per planning area for 1977. The housing market price ranges are based on actual sales and are representive of the city. A special study on rent incomes for two-bedroom unit, was conducted by the city based on its 1977 registered renting referral listings which participation was voluntary. (85% of the apartment units were registered.) Also, a rent income stduy (1977) was conducted by the Imperial County Assessor's Office, Appraisal Department. Date from both studies was used to determine the rent range. The near monthly rent for El Centro based on the above, was $159.

PLANNING AREA I

Located on the north central part of the city, planning area 1 is bounded by railroad on the east, Imperial Avenue on the west, Adams on the south, and Villa Avenue on the north.

Primarily composed of single family dwellings with some multiple units, Planning Area 1 is one of two planning areas containing trailers. Even though a 1977 windshield survey revealed 23 instances of homeowner rehabilitation activity, the neighborhood had been declining; since 1972 the proportion of deteriorating units increased by 3% and the proportion of dilapidated units increased by 2%. On several blocks, particularly in the newer subdivision, general property maintenance is needed. Generally, the street conditions are fair but on at least four streets there are no sidewalks. Some negative environmental factors exist south of the railroad tracks. Subject to intense noise levels, several multiple dwelling units and single family residences abut the railroad tracks. The only access to these units is through a narrow unpaved alley.

FIGURE 23


AREA 8
PICO
VILLA AVE
VILLA AVE
AREA 1
AREA 1A
ADAMS AVE
AREA 2
AREA 3
RD
MAIN ST
STATE ST
AREA 7
AREA 5
HOLT AVE
AREA 4
RD
DOGWOOD
ROSS AVE
AREA 6
LA BRUCHERIE
INTERSTATE 8
SCATTERED
DEVELOPMENT
AREA 9

Existing public areas facilities within this area include an elementary school, a junior high school and a park which appear to adequately serve this planning area. However, the current amount of residential vacant land in this area could accommodate 22 new units -- 15 single family and 7 multiple dwelling units. Furthermore, units are currently under construction. This potential future population could increase the demand for additional public facilities.

The 1970 census, divided by enumeration district, indicated that there were approximately 75 families below the poverty level living in this planning area. Currently, the rent range lies from $175 to $200 and the housing market value ranges from $30,000 to $37,000.

Planning Area I should be designated as a target area for an intensive housing conservation program due to its recent rapid decline within the past five years. Individual homeowner rehabilitation activities should be encouraged. In addition, an emergency repairs and codes and inspection service should be directed towards eliminating immediate hazardous conditions wherever possible. In cases of necessary demolition, residents should be relocated to remodeled housing facilities. Due to the great number of families living below the poverty level, special consideration should be made towards providing public assistance in either public housing or through rent subsidies. Potential sites for public housing or publically assisted housing may be taken from the current vacant residential parcels. Housing located south of the railroad along the unpaved alley should be eventually phased out and left as open space unless the railroad right of way is abandoned. A city program for property maintenance should be established and enforced by the use of

citations or charges for public clean up. In addition, the city should develop a capital improvements program to repair the cited poor street conditions and to plant trees for a better overall environment.

Planning Area 1A

Bounded by Villa Avenue to the north, Dogwood Road to the east, Fourth Street to the west and Adams Avenue on the south, Planning Area 1A is located in the northeast corner of the city.

While most of the land in the second newest section of the city is actually defined as industrial, 98% of the existing housing in this planning area is composed of single family units. Though there are a few scattered vacant lots, this area is built to its residential capacity. A significant improvement in the overall housing quality has occurred since 1972 as the proportion of sound homes increased by 5%. Property maintenance and street conditions are also in generally good condition. But while the overall physical composition has improved, several problems exist. First the railroad to the west and south acts as an access barrier; with Fourth Street being the only primary link to the rest of the city, this area is relatively isolated. One large park exists south of the residential area. Secondly, industrial uses such as a steam generation plant in the eastern portion of the planning area negatively impact the residential section. And thirdly, the railroad itself generates undesirable noise levels.

Though Planning Area IA has good housing quality, it encompasses 50 families with incomes below the poverty level (1970 figures) and has the second lowest mean family income in the city, $6848. There are virtually no rental units; the mean assessed home valuation is $20,116.

Due to the general good quality of this planning area, a perpetual housing conservation policy should be applied to insure the continuance of the housing characteristics.

Planning Area 2

Bounded on the east by the railroad, on the west by Imperial Avenue, on the north by Adams Avenue and on the south by State Street, Eighth Street and Holt Avenue, Planning Area 2, the oldest section of the city, is located in the central part of the city.

Equally divided between single family residences and multiple dwelling units, the percentage of delapidated housing stock is over 20 years old. Street conditions are very poor. On many streets, curbs, gutters, and sidewalks are either badly broken or do not exist at all. There is little street planting. Overall property maintenance ranges from fair to poor. A minor attempt at individual property rehabilitation has been made with 13 cases cited in the 1977 windshield survey. But, Planning Area 2 is characterized by several other "inner city" problems such as a high concentration of families below poverty level and mixed, often incompatible land uses. There is a broad range of residential densities and a mixture of residential levels. Noise is also generated from the railroad on the east. But this planning area does have many public facilities such as Adams Park, Lincoln School and the Civic Center.

One hundred and thirty-six families below the proverty level reside in planning area 2 where the rent ranges from $63 to $250 per month and the house market value ranges from $13,000 to $40,000. The near rent for this area is $107, and the mode housing market price range is between $25,000 and $29,000. These house cost indications are well in excess of this group's 25% income allocation for housing.

Planning Area 2 should also be designated as a major target area for an intensive housing conservation program, a public improvements program and a public housing program. Existing vacant land and the potential for higher uses could accommodate 80 multiple dwelling units. These prospective sites could possible be used for public housing facilities.

In addition, incompatible land uses should be eliminated through the use of amortization regulations in zoning and other powers as soon as possible.

Planning Area 3

Located in the southeast corner of the city, Planning Area 3 is bounded by Dogwood Road on the east, Adams Avenue on the north, the railroad on the west and Ross Avenue on the south.

This planning area has experienced a drastic decline since 1972 with dilapidated housing increasing 17%. Sixty five percent of the existing stock is over 20 years old. The decline of this area is futher reflected in the lowest assessed home valuation range in the city, $10,000 - $35,000 with the mode range being $22,000 - $25,000. Agriculture oriented industries on the north, heavy agricultural industries and extractive uses to the south, and farm tool repair and manufacturing facilities to the east box in this area. The Southern Pacific Railroad on the east also emits high levels of noise and vibration. Even though an elementary school, small park and a community center needing improvements are situated within this section, there are very few amenties.

The socio-economic conditions of Planning Area 3 are as equally depressed as the housing stock. Approximately 137 families are below

the poverty level and the mean family income, $6236, is the lowest in the city.

Planning rea 3 should become a principle target area for many types of on-going housing programs. The City is currently directing a number of housing programs in this area. A more detailed discussion will follow in the three year Housing Assistance Program.

Planning Area 4

Planning Area 4 is located in the south central part of the city, bounded on the east by the railroad, on the south by Ross Avenue, on the north by Holt Avenue, and on the west by Eighth Street.

Blending several architectural styles, side by side along tree lined streets, Planning Area 4 retains a unique character. Even though it is the second oldest section of the city with 75% of its structures over 20 years old, its housing quality has significantly improved since 1972. Fifteen cases of homeowner rehabilitation activity currently underway were observed in the 1977 windshield survey. Neighborhood pressure for continual property maintenance and improvement may be the primary reason for this area's upsurge. Single family dwelling constitute 90% of the area's housing inventory. Housing which was sound or in need of minor repair increased 9% over the past 5 years. However, some minor property maintenance is needed between Sixth Street and Fourth Street. In a few instances, some repair work is needed on gutters and sidewalks. Vine Street is exceedingly narrow, indicated by the lack of garages for several blocks. Overall, no major negative environmental factors plague this area with the exception of noise generated by the railroad and Fourth Street traffic.

The public facilities within Planning Area 4 are a large baseball park and an elementary school, both contributing postively to the unique character of this section. The socio-economic composition of this area is relatively stable and is reflected in the rent range, $63 - $250 and mean assessed home value range from $13,000 to $40,000.

Planning Area 4 should be designated as a prototype neighborhood for housing conservation programs. As the proportion of deteriorating homes decreased from 18% in 1972 to 8% in 1977, continued homeowner rehabilitation and property maintenance should be encouraged. Special consideration should be paid to alleviating the narrow section on Vine Street. Several vacant residential parcels, bounded by Maple, Cedar, Third Street and the railroad are potential development sites.

Planning Area 5

Bounded by Eighth Street on the east, State Street on the north, Ross Avenue on the south and Imperial Avenue on the west, Planning Area 5 if situated in the south central part of the city.

Composed of 805 single family, 9% multiple dwelling units and 11% duplex, the good housing quality in this area has held constant. The area rents range from $50 - $295 (a median of $255) and the range of assessed home value is from $32,000 - $45,000. However, property maintenance is needed in several areas, particularly on Vine Street between Lenrey and 14th Street. Sidewalks on the south side on several streets do not exist or are badly broken.

Most of the public facilities in this planning area, such as the high school and junior high generate substantial traffic and noise. The residential area immediately adjacent to the schools is particularly subject to intense traffic and noise. Litter is also a problem in this

section. Due to these negative influences, the housing quality surrounding the schools is not as good as in other parts of this planning area.

Planning Area 5 will soon be built to residential capacity. A four-acre tract, under construction, will accommodate approximately 64 apartment units. In addition, five single family units will be built on R-1 lots.

The city should include this area in a capital improvements program for the repair of street conditions. A plan targeted at reducing the heavy traffic around the high school should be enacted. Property maintenance may be insured through the use of citations.

Planning Area 6

Located in the southern protion of the city, Planning Area 6 is bounded on the north by Ross Avenue, La Burcherie Road on the west, Fourth Street on the east and by the city limits and south by Interstate 8.

Though Planning Area 6 is the largest section within the city, 1296 units, the neighborhood has remained 98% sound. Property maintenance is also very good. This good quality is reflected in a rent range from $75 - $235 with a mean rent of $184 and an assessed home value of $32,000 - $85,000. However, some homes located adjacent to Fourth Street and Interstate 8 may be negatively influenced by noise levels. Imperial Avenue also generates a great deal of traffic.

This planning area is further enhanced by the presence of a large park, a community hospital and two elementary schools.

The city should address Planning Area 6 with a long-term housing conservation program to insure its continued excellent housing quality. This planning area is further enhanced by the presence of a large park, a community hospital, and two elementary schools.

Planning Area 7

Planning Area 7, delimited on the north by the city limits, on the south by Ross Avenue, on the east by Imperial Avenue, on the west by La Brucherie Road, is situated on the western side of the city.

As the fourth newest section of the city, the housing quality is 98% sound. This quality is reflected in the rent range of $175 to $220 and an assessed home value range of $30,000 to $54,000. But on several block, clutter is a problem. Though the curbs, gutters and sidewalks are generally in good condition, street planting is greatly needed, particularly along Wensley Avenue. A park and elementary school are also located in this area.

Planning Area 7 is another section to the city to be incorporated in a continuous housing conservation program. Poor property maintenance may be alleviated by the use of fines or citations.

Planning Area 8

In the northwest corner of the City Planning Area 8 is bounded on the east by Imperial Avenue, on the south, north, and west by the city limits.

Although this area is the most recent developed section of the city, it has an unusual composition of housing types: 16% are single family, 41% are multiple units and 43% are trailers. Several negative factors attributed to a poor environment in this area. The city boundary winds between Main Street and the railroad with county development and zoning standards being somewhat different from city standards. As a result, there is a strange mixture of housing patterns. Overall property maintenance and housing quality is especially poor in this subsection of Planning Area 8. In

addition, the railroad and sewage treatment plant to the north emit noise and fumes. However, the rent ranges $155-$295, and the assessed home value range, $38,000-$42,000 indicate that the area is relatively stable. While no schools exist in this section two parks have been proposed.

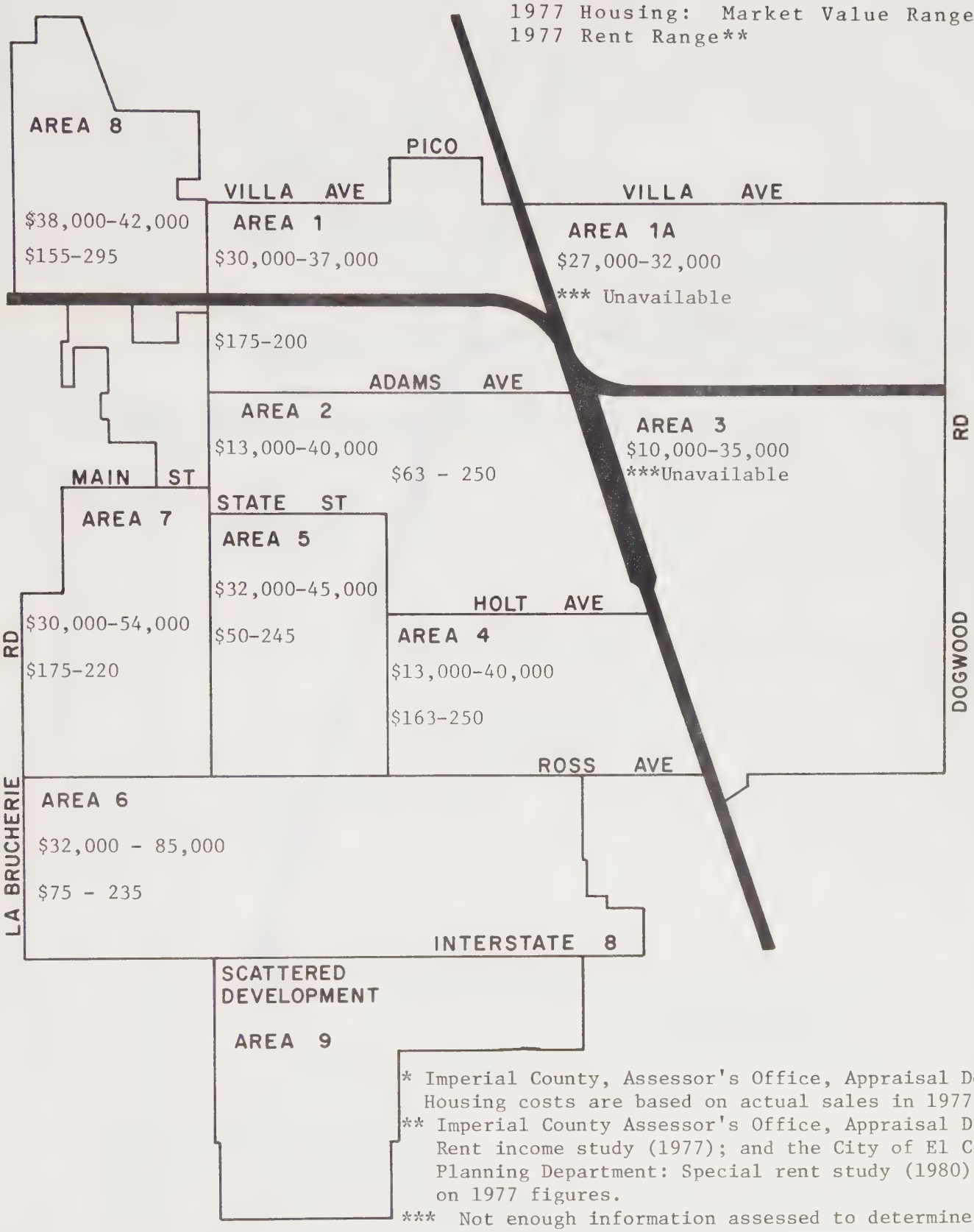
While 97% of the housing units have been rated as sound, the general quality of construction and lack of environmental amenities indicates that the city should direct a concentrated housing conservation program in this area to improve the living conditions. Development standards should also be examined to insure that new development is of a quality that would benefit this area.

Residentially zoned vacant land within the existing city boundaries is in limited supply. Following historic trends, approximately three years of population growth (or 1400 people) could be accommodated. Many areas of the city zoned for multiple units are presently underutilized. Preliminary calculations revealed that these underutilized parcels could accommodate over 300 additional persons if they were developed to their residential capacity. However, the probability that the single family homes on these sites will be replaced by apartments in the short run is unlikely. Therefore, as construction activity has paralleled the population growth trend, the demand for additional housing units will be realized in another four years. At that time additional housing units will probably be located in the city's area of influence. Regardless of the growth trend that emerges, future housing sites may be provided along the periphery of the current city boundaries. It is anticipated that development in the area of influence will commence in the west and will grow in a counterclockwise pattern around the city. Long run housing

development will occur along the periphery of the previous development pattern. A more detailed discussion of future housing development trends may be found in the land use element.

Figure 24

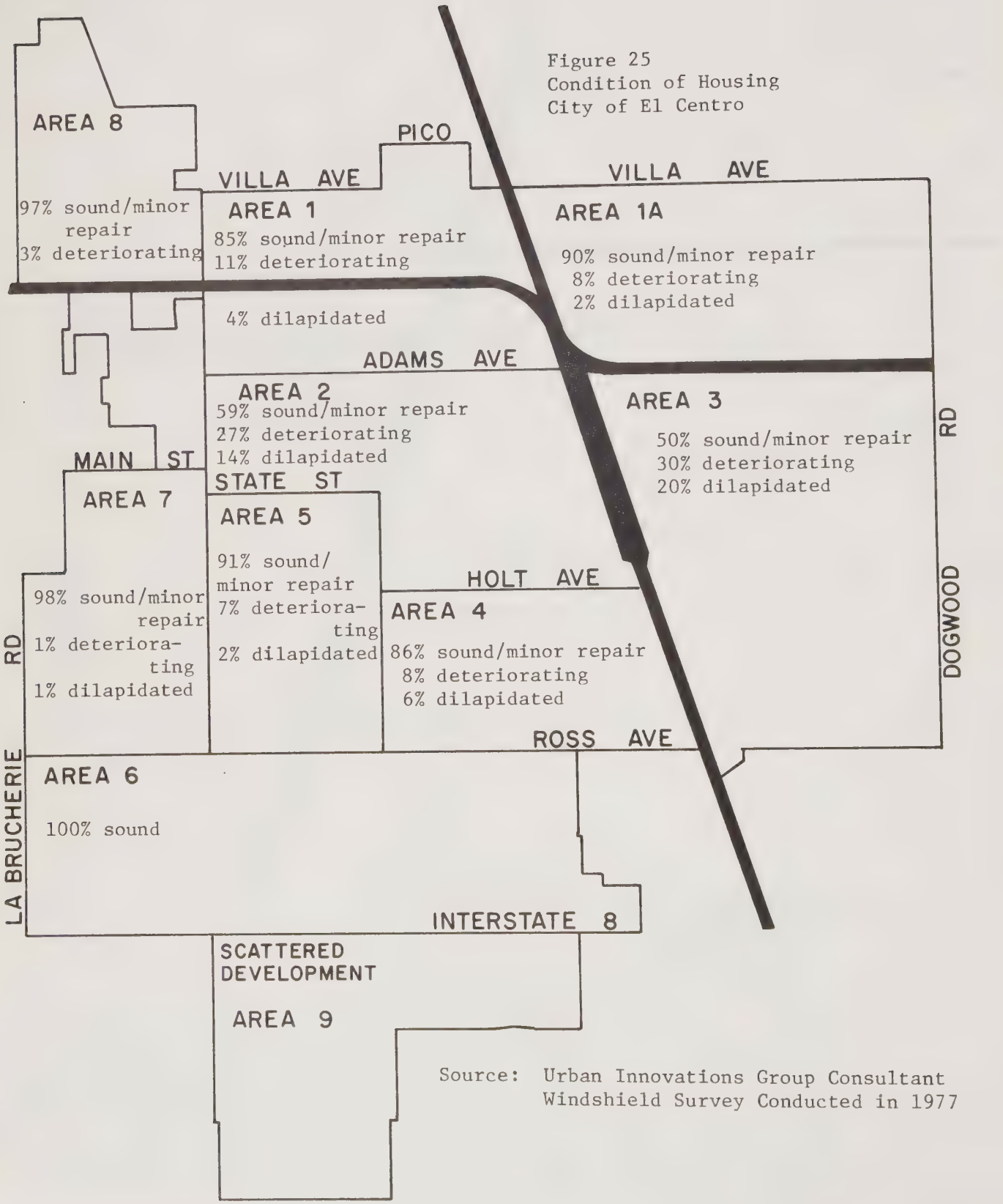
1977 Housing: Market Value Ranges*
1977 Rent Range**



* Imperial County, Assessor's Office, Appraisal Dept: Housing costs are based on actual sales in 1977.

** Imperial County Assessor's Office, Appraisal Dept: Rent income study (1977); and the City of El Centro Planning Department: Special rent study (1980) based on 1977 figures.

*** Not enough information assessed to determine a representative rent range.



Source: Urban Innovations Group Consultant
Windshield Survey Conducted in 1977

Table 30

Current Housing Inventory by Condition and Age of Structure

Area	Condition			Age		
	Sound/ Minor repair only	Deteriorating	Dilapidated	Less than 10 years	11-20 years	Over 20 years
#1 5th oldest	85%	11%	4%	28%	28%	44%
#1A 2nd newest	90%	8%	2%	23%	40%	37%
#2 oldest	59%	27%	14%	16%	4%	80%
#3 4th oldest	50%	30%	20%	14%	23%	62%
#4 2nd oldest	86%	8%	6%	5%	20%	75%
#5 3rd oldest	91%	7%	2%	13%	14%	73%
#6 3rd newest	98% *	2% *	---	37%	39%	24%
#7 4th newest	98%	1%	1%	39%	30%	32%
#8 newest	97%	3%	---	63%	33%	4%

Source: UIG project estimate

* Revised estimate

HOUSING PROGRAM

In developing a formal housing program for the City of El Centro it is recommended that consideration be given to the following objectives and principles as guidelines to such a program.

Objectives

To ensure that there is a variety of housing types available to meet the needs of the present and future residents

To ensure that the quality of the dwelling units shall be adequate to protect the health, safety and general welfare of the citizens

To see that the area-wide environment for housing is protected and maintained so that a "total living quality" exists

Principles

To encourage citizens to participate in housing maintenance programs designed to arrest housing deterioration in its early stages, and thus maintain and increase property values as well as improve living conditions

To encourage the design and construction of a variety of housing types including estates, single family, clusters, patio and town houses, and apartments

To encourage private ownership and permanent residency. Where multiple family housing is appropriate, provide high quality units to serve the housing needs and amenities consistent with population density

To support governmentally assisted housing as an appropriate means to meet the needs of the lower income families within the City.

To provide density bonuses, inclusionary ordinances, and other governmental inducements to encourage privately developed, low to moderately priced housing

To endorse the principle that the housing market shall be open to all people regardless of race, color, religion, or ethnic background

Recommended Policies

1. The City shall select one or more of the areas with the highest priority of need and determine what programs best apply to the conditions.

2. The City shall, through zoning, subdivision, or other legislation, encourage private activity on behalf of the residents who need improved housing. This shall include provisions for a minimum lot size of not less than 6,000 sq. ft to be allowed in conjunction with the purchase of below market rate homes. This minimum lot size is intended as an incentive for voluntary participation in governmentally administered home ownership assistance programs.

3. The City shall determine whether the Housing Authority has a role to play in solving the local problem. If the Housing Authority has the capability to perform the required services, the City shall cooperate with the agency within the scope of its legal authority.

4. If the solution to the problems requires the activation of the Redevelopment Agency (the City Council is the Agency), the program or programs shall be developed with the full cooperation of all City agencies.

5. If the program involves all or most of the above actions, whether directed toward separate areas or toward the total of the problem areas, the City shall act as the coordinating agency to program the work and assure the welfare of the residents who may be affected.

6. Recognize the wisdom and need for full community participation, especially in the areas where action programs are to be initiated. The need for understanding and support of the program is absolutely essential to the solution of the problem. In many cases this will involve direct citizen participation. The people involved in the action program must have a sympathetic attitude and be able to communicate effectively with concerned individuals.

7. The City shall continue its program of demolition of unsafe structures which cannot be rehabilitated.

8. The City shall determine the location of land for each type of housing program.

9. The City and the Housing Authority shall develop programs for the re-housing of the displaced families, working in close cooperation with the private housing sector.

10. The City shall stimulate sponsors and builders to participate in programs to link the needs of low and moderate income families to the types of housing that can be provided.

11. The City shall provide an adequate staff for the implementation of its housing program.

PRIORITIES

Planning Areas 1,2,3, and 8 have been designated by the City as "impact" areas for housing programs. In terms of priority: Planning Areas 2 and 3 will reveive immediate attention including capital improvements and housing programs: Planning Area 1 will be designated as an area for housing conservation. In addition, housing improvement programs are available City-wide.

The City has undertaken several housing programs in Planning Area 3. Last year, two CETA crews were enganged in a painting program for senior citizens and low and moderate income families in this area. Refunding of this program is being sought. A CETA crew also participated in an energy conservation program for senior citizens by repairing broken siding and weather stripping windows. Refunding of this program is also being sought. Loans and grants for housing rehabilitation from the Community Development Block Grant have been made available in Planning Area 3. A three year plan developed by the City envisions a continuation of housing rehabilitation; the community center facilities will be expanded and the construction of a sewerline, storm drain or water line and five acre park will be installed in Planning Area 3.

Planning Area 2, which encompasses the Central Business District will be subject to intense redevelopment. Private developers are interested in constructing many assisted housing units for low and moderate income families.

The land use element proposed higher density in the areas adjacent to the Centeral Business District. This area will be zoned appropriately

so that a density bonus will provide an incentive to private redevelopment. Presently, substandard single family residences are being replaced with good quality multiple family units.

Though no long range plans exist for Planning Areas 7 and 8, publically assisted housing units have been constructed for senior citizens in this area. Planning Areas 2 and 3 will be subject to a strict code enforcement program. Code enforcement, in combination with home conservation and rehabilitation efforts will help reverse this area's decline in housing quality.

CITY PLANS OF ACTION

Currently the City of El Centro has several housing programs proposed to meet the housing needs of specific target groups and the general population over the next three years. Housing assistance priorities for the lower income, minority residents as well as low income elderly and Caucasians have been classified into four categories:

1) Rehabilitation assistance to homeowners or prospective homeowners
2) Provision of new and existing publically assisted rental housing
3) Rehabilitation of rental units
4) New construction assistance

Program clsssifications may be divided under three plans of action. The first plan of action is a housing conservation program which includes housing inspection, code enforcement and housing rehabilitation. The second plan of action is a capital improvements program which will provide public housing and publically assisted housing for special needs groups. The third action plan consists of public improvements to provide for needed park and community center facilities to improve the environmental quality of those areas most in need.

Action Plan 1

1. Annual housing inspection for all hotels, motels and apartments over three units
2. Housing code program for all existing housing on a complaint basis
3. Code compliance and housing rehabilitation program with loans and grants for selected blocks based on need
4. Paint up program for senior citizens and low to moderate income families
5. Staff assistance in the preparation of applications for publically assisted housing programs

Action Plan 2

1. Section 8 rental assistance for single family and multiple units for families, senior citizens and handicapped
2. Ongoing additional assisted and public housing units for low income families
3. Cooperation, financial information and density bonuses to developers to encourage development of housing for low and moderate income families

Three Year Housing Assistance Plan

The City of El Centro will assist 336 lower income households in the next three years with various assisted housing programs. This is approximately 36% of the total housing assistance need. A detailed summary may be found in Table 31.

New rental units would be made available to lower income families and minorities located throughout the City.

The three year plan endeavors to provide funds for rehabilitating sub-standard rental units in planning areas two and three.

The goal of supplying 86 Section 8 subsidies will allow 86 families to move into compatible existing rental units. This program will be city wide for lower income families.

Rehabilitation assistance to lower income homeowners or prospective owners will provide for the rehabilitation of 88 units at the rate of approximately 30 per year using Section 312, Community Development Block Grant (C.D.B.G.) Title I, S.B. 966, and possibly Marks Foran funds.

Short range goals are to concentrate these programs in planning areas two and three. Long range goals would be to expand these programs throughout the city.

New construction assistance to homeowners or prospective homeowners will supply Section 235 assistance to 30 dwelling units in planning area three. Special Southern California Association of Government (S.C.A.G.) C.D.B.G. funds will be used for land write down on 12 units using California Housing Finance Agency (C.H.F.A.) financing. Moreover, 1.2 million dollars per year is available for city residents to purchase mortagages at a reduced interest rate. A brief status report and description of existing and planned programs follow.

Table 31

Goals for Lower Income Housing Assistance

Types and Sources of Assistance	All Households	Elderly or Handicapped	Families	Large Families
1) New Rental Units				
Section 8 - HUD	60	0	46	14
2) Rehabilitation of Rental Units				
Section 8 - HUD	36	0	28	8
CD Block Grant	10	0	8	2
3) Existing Rental Units				
Section 8 - HUD	40	0	31	9
4) Rehabilitation Assistance to Homeowners				
CD Block Grant	88	26	44	18
5) New Construction Assistance to Homeowners or Prospective Homeowners	80	15	48	17
Section 235 C.H.F.A.	22	3	14	5
6) All Housing Assisted	336	44	219	73
7) Percent of all Households	100%	13%	65%	22%

Source: City of El Centro

Status Report: Community Development Block Grant Housing Programs 1977-1978

The City of El Centro was awarded $200,000 in Community Development Block Grant funds for the time period of 1977-78. This was the first year that the city participated in the program. The actual program year was September 1, 1977 through December 31, 1978.

HUD Goals Achieved

1. The housing rehabilitation program goal was to rehab six elderly or handicapped units, 16 family units, and six large family (5+) units for a total of 28 residences. The actual results were six elderly or handicapped units, 5 family units, and 2 large family units for a total of 13 residences. Of these, two included relocation and acquisition. Additional residences could not be rehabed due to the expenditure of all funds.

   The code enforcement program was also successful with numerous inspections and upgrading of residences occuring.

Additional funding for manpower to be used in painting and repairing homes was available through CETA program. Accomplishments included the painting of 43 homes and minor home repairs and weatherization for 30 residences. The CETA program also supported the regular CDBG activities for housing rehabilitation to some extent.

2. Improvements in Tract 98 during this past year were negligible due to the lack of funding. However, in the upcoming program year construction bids are already in and water and sewer lines will be installed; at least three new residences constructed, and 31 new homes added under a Section 235 program.

3. A housing program for senior citizens was implemented by using Section 8 existing rental units. A total of 160 units were made available to seniors and it appears that no new units will be needed in the immediate future.

4. Regarding new rental units and rehabing rental units, the goal was to service 30 to 50 units. This goal was significantly exceeded. New public units included the awarding of 35 units (19 senior and 16 family) and an additional 32 units. Both projects are currently in the bidding phase and construction is expected this year. Private development Section 8 contracts were approved including 63 units for Seniors and handicapped (37 still vacant), 29 units

for single family dwellings (completely rented), and 24 units for family and handicapped (apartments under construction). This totals 116 units.

City Goals Achieved

1. Street lights were installed on Orange Avenue at a cost of $42,195.

2. The drainage and playground at the Community Center was improved with $1276 expended by the city for this activity.

3. The alleys were not paved in the anticipated blocks. However, street repairs were made including street sealing ($19,296) and paving overlay on First Street from Main Street south to Orange Avenue ($14,112).

4. The repair of sidewalks, curbs, and gutters continued in the project area with $160 spent.

Public Housing Authority Goals Achieved

The Imperial Valley Coordinated Housing Authority remodeled the public housing in the project area using the $225,000 approved by HUD.

Other Activities Undertaken

1. Two new apartment complexes were built with private funding. One was in the project area and one adjacent to the area. This marks the first building activity in the CDBG area in years.

2. The California Housing Finance Agency designated the City of El Centro as an area in need of mortgage assistance. This funnels $1,980,000 into the city for assisting owners in rehabing and refinancing, and new construction of their residences.

Budget Expenditures

For the program year 1977-1978, $200,000 in funding was allocated. Preliminary estimates of expenditures can be made, but not until after the audit, will the figures be considered as final.

	Budgeted	Actual Expenditures	Balance
Rehab. loans & grants	$ 167,000	$ 147,967	$ 19,033
Administration	31,000	42,838	(11,838)
Contingencies	2,000	2,000	0
Interest Earned	1,609	0	1,609
TOTAL	$ 201,609	$ 192,805	$ 8804*

*The $8804 balance will be carried over into administration for the following year.

IMPLEMENTATION

Levels of Government and the Scope of Their Activities

Since the role of government in the area of housing is limited, it is important to grasp in detail those powers that are available to various levels of government.

The City

The City has within its police powers the right to adopt and enforce building code regulations and to condemn and physically remove structures that are unsound and dangerous. They also have the power and obligation to plan comprehensively, and to regulate the subdivision and zoning of land. In addition, the City, through its General Plan or legislative function, may enact an inclusionary ordinance requiring that a reasonable percentage of new homes be sold at prices affordable to low and moderate income families. (Successful programs, combining inclusionary ordinances and density bonuses, have been applied in Palo Alto, Orange County and elsewhere.) The City, through capital expenditure and continuing maintenance, has the opportunity to set an example for the private sector of the community in terms of high standards of community design and environmental quality.

The City can initiate and participate in urban renewal projects which deal with rundown or dilapidated areas. It can plan to provide housing for families in lower socio-economic and income brackets. It can also support rehabilitation and "fix-up, paint-up, clean-up" projects.

The City Housing Authority

This agency is involved with implementation of the Housing Element for the City of El Centro. The seven (7) cities, Brawley, El Centro, Westmorland, Holtville, Imperial and the County Housing Authority operate under the Imperial Valley Coordinated Housing Authorities located in Brawley. IVCHA is in charge of all the day to day operations and maintenance of public housing for the seven (7) cities and County Housing Authority.

The County

The major role of County government is that of coordination between cities and between various jurisdictions and State and Federal governments. As stated earlier, not every city can be expected to have and maintain a complete inventory of housing types and prices. Housing planning must be at a County or regional level. County government is also involved in dealing with many social problems, such as distribution of welfare services. This must be coordinated with the housing needs of families in the lower economic brackets.

The State

Enabling legislation for programs including public housing and urban redevelopment are at present the major contribution of State Government. State agencies also address human resource development since jobs are important to total community well being.

In view of the State's very limited number of available funded housing programs, a housing rehabilitation act was passed in 1973 which authorized various governmental agencies to raise money for rehabilitation

purposes. The Marks Foran Residential Rehabilitation Act of 1973 authorizes the issuance and sale by cities, counties, housing authorities and redevelopment agencies of revenue bonds and bond anticipation notes not secured by the taxing powers of the agency for the purpose of making loans for residential rehabilitation in target areas meeting eligibility criteria. Bonds issued and sold cannot constitute a debt or liability on the local agency, but must be payable solely from revenue.

Loans can be made for residential rehabilitation in structures outside of the target areas if a commitment is made that the structure will be occupied by low income persons for the duration of the loan. Rehabilitation of structures outside the designated areas must be shown by the legislative bodies to be economically feasible and that the structure is located in a stable and viable residential neighborhood.

Owner occupied and investor owned residences are both eligible. Commercial properties within the target area which are considered to be an integral part of a residential neighborhood are also eligible. Loans may also be used to purchase homes previously rehabilitated by a redevelopment agency. All property owners in the target area may apply for loans. There are no specific income eligibility requirements although owners must satisfactorily demonstrate an ability to repay the loan. Interest rates for the loans will fluctuate depending on the current bond market. Currently Marks Foran loans are expected to be around 6 to 7½%. The maximum loan is $35,000 per dwelling or commercial unit. The maximum repayment period for residential rehabilitation loans

is 40 years or 4/5 of the economic life of the property, whichever is less.

The Federal Government

The Federal Government has, since 1949, played an active role in the financing of public housing and urban renewal programs. The number and scope of these programs should be reviewed by the City.

There are several specific Federal programs available to aid the City of El Centro in its efforts to improve the quality of its housing inventory, particularly as this relates to the critical problem of low and moderate income housing facilities. Among these available "tools" are the following:

The Housing and Community Development Act of 1977

The purpose of this Act is to alleviate physical and economic distress through the stimulation of private investment and community revitalization in areas with population outmigration, or a stagnating or declining tax base. The money must be spent on programs that would give maximum benefits to low or moderate income families or aid in the prevention or elimination of blight.

The Act extends the Community Development Block Grant Program (created by the Housing and Community Development Act of 1974) and authorized up to $3.5 billion in fiscal 1978, $3.65 billion in fiscal 1979, and $3.8 billion in fiscal 1980. Up to $400 million was authorized during each of the three years for urban development action grant assisting severely distressed cities and urban counties through neighborhood reclamation. Twenty-five percent of the funds available for

action grants was designated for cities under 50,000 population which were not central cities of a standard metropolitan statistical area.

One primary goal of the Act is to provide 400,000 units of housing for low and moderate income persons in fiscal 1978, with 350,000 new and rehabilitated units under Section 8 rental subsidy program for fiscal 1978, including 20,000 units to be provided under the auspices of state housing finance agencies. The remainder of the 400,000 units (50,000 units) would be conventional housing. $35 million is set aside for public housing modernization aimed primarily at assisting local housing authorities in capital improvements projects to save energy and correct local health and safety code violations. $665 million is for public housing operating subsidies. About $13 million of that amount will go to pay for exceptionally high utility costs incurred this winter.

The community development block grant program has replaced a consolidation of the previously existing narrow categorical grant programs for aid to urban areas (e.g., open space, water and sewer, beautification and model cities program). $100 million has been appropriated for each of the three years (1978, 1979, and 1980) for phasing out programs begun under the old categorical grant programs.

Cities now have a choice of how the amount of funds they receive under the community development block grant program is determined: under the pre-existing formula or a new formula. The old formula weights population twice, amount of housing, overcrowding and poverty. It favors western and southern regions which have growing populations. The new formula uses age of housing counted 2½ times, poverty counted 1½ times, and growth lag counted once. Age of housing refers to pre-1940 housing

stock, and growth lag is defined as the extent to which a locality has fallen below the average population growth rate of all metropolitan cities; this formula would be of the most benefit to older cities, many of them in the Northeast and Midwest.

Application Requirements

Communities are required to include in their application for block grants a summary of housing as well as community development needs, and a program to improve conditions for low and moderate income persons to remain in or return to the community. (The HUD Secretary is allowed to waive some application requirements for qualified small communities where the application does not involve a comprehensive community development program.) Citizen participation is required in the formulation of the block grant proposals.

Section 8

This legislation provides for government subsidies of the rent of low-income persons. Eligibility is limited to families with incomes of up to 80% of the median of a particular area. The law also requires that at least 30% of the families have income not exceeding 50% of an area's median family income.

Participating families were required to contribute not less than 15% nor more than 25% of their total income to rent, which was not to exceed by more than 10% the fair market rent as established by HUD. The government makes up the difference between the family's required rental share and the actual rental price.

HUD enters into a 40-year contract with public housing agencies or a 30-year contract with private developers who provide newly constructed

rehabilitated, or adequate existing housing. Public housing agencies are required to establish 1) tenant selection, 2) procedures for prompt payment of rents and evictions for non-payment, 3) effective tenant-management relations to assure safety and adequate project maintenance, and 4) viable homeownership opportunities.

Section 235 provides mortgage insurance to purchasers of single family residences with incomes less than 95% of the area medium income. In addition this program provides for mortgage interest subsidies capable of reducing the interest rate paid by the purchaser to as low as 4%.

Section 312 provides 3% loans for rehabilitation of residential and business properties to residents of areas designated in a community block grant application. This program supplements and supports block grant housing rehabilitation efforts.

Miscellaneous Relevant Items under Title II

Mobile Homes: The ceiling on FHA mortgage insurance for mobile homes was increased to $15,000 from $12,500.

Urban Homesteading: The fiscal 1978 urban homesteading demonstration program was increased to $15 million from $5 million.

Property Improvements: The maximum loan or advance credit for home improvements and mobile home loan insurance program was increased to $15,000 from $10,000.

Title I amendment: This authorizes the HUD secretary to make a lump sum payment of a community's grant allotment to allow the community to establish a revolving loan fund at a private financial institution to finance institutional activities.

The following private housing programs are included in this section because interviews with the respective institutions indicated that these housing programs could be very successfully implemented in El Centro.

Neighborhood Housing Services Program

Organizing citizens, city government, and private lenders in a team effort for neighborhood preservation, the Neighborhood Housing Services program offers a revolving loan fund for home improvements in sound but deteriorating neighborhoods. The Urban Reinvestment Task Force, a partnership between the Federal Home Loan Bank Board and the Department of Housing and Urban Development provides technical assistance to local governments interested in establishing an NHS but, once the program is operational the Task Force involvement ceases except when additional aid is requested.

Systematic code enforcement programs are used in most NHS programs. Capital improvements of code enforcement are funded by the City. NHS operating costs are funded entirely through local sources and local contributions supply much of the high risk fund. A local commitment of $25,000 is required from financial institutions to fund the development process.

Neighborhood residents become involved in the program because they are interested in their neighborhood; they control the program.

Financial institutions participate to protect existing investments in the neighborhood, to lessen redlining allegations and to increase deposits. Because their perceived risk in the neighborhood is lessened, this results in stronger commitments toward the area. Local government participates because the program provides the opportunity to leverage public investment in older neighborhoods by stimulating private lending in these areas.

Control is vested in a board of directors of a private, non-profit corporation that consists primarily of citizens and financial institutions. Governmental representation is usually limited to one member from the local city government. Each NHS office is staffed by three persons: a director, an associate director and a person who serves as a clerical-administrative assistant. Each program develops its own priorities and policies. Although the Task Force may provide technical assistance in helping to establish operating procedures, important decisions that affect the loan fund are made by the NHS board.

Operating Phase

Program start-up requires approximately one year of organizational activity after incorporation until the NHS makes the first loan. During this time administrative procedures are established, including processing of loan applications; work write-ups; closing of loans; and filing of liens. Educational efforts are undertaken on behalf of the program on a communitywide basis. Accounting and billing systems must be implemented. Contractors must be investigated in order to create an approved contractors list. Extensive efforts must be made to disseminate information on both the NHS and code enforcement programs. Finally, operating

and high-risk funds must be raised. In many of the sites, City commitments must be finalized, including the specifics of the code enforcement program.

An operational NHS consists of a board of directors and a small staff. The board, responsible for overall program direction, usually has a number of active committees: personnel; fundraising; high-risk loan review.

At the core of each NHS is its concern with housing reinvestment in the neighborhood. The NHS uses the code enforcement process to force investment decisions, helps homeowners obtain bank financing and makes loans available from its high-risk loan fund to nonbankable residents.

The time horizon for an NHS program to demonstrate results is at least four to five years. Neighborhood change is a slow process and occurs gradually. Likewise, attitudes normally take time to change. Representatives of financial institutions contacted said that, in neighborhoods experiencing significant disinvestment, it would take several years of demonstrated progress until their perceptions of lending risks in that area altered.

Security Pacific Bank's Property Improvement Program for Community Development

This program is designed to establish a local operating agency, usually the City, to work in conjunction with Security Pacific Bank to provide subsidized interest property improvement loans. The City's subsidy payments may come from CDRS blockgrant.

Backed by FHA Title 1 insurance, the federal government and lender cover the risk of a loan and therefore the local government does not incur

any contingent liability. The federal government insures the lender for 90% of the actual loss and the lender assumes the balance.

Due to the City's lump sum interest subsidy payment to the bank at the time a loan is implemented, the borrower receives a reduced interest rate. Security Pacific Bank calculates the subsidy and advises the city at the time the loan documents are requested.

The bank is responsible for the credit decision and documentation of the loan.

Operationally, the local government designates an area of the community for conservation. The local government establishes criteria for eligibility and levels of subsidy; it also determines the nature and extent, if any, of supporting public improvements and ancillary support services such as technical counseling.

Security Pacific's staff assumes the responsibility for the credit investigation, document verification and preparation, processing of loan payments and furnishes the local government with monthly reports.

Other financial institutions such as Crocker Bank and Bank of America also offer a similar program. Currently, the City provides programs offered by both Security Pacific and Crocker Banks.

Incentives to Encourage Affordable Housing for Low and Moderate Income Families

The City through its general plan or its legislation function, may enact an inclusionary ordinance requiring that a reasonable percentage of new homes be sold at prices affordable to low and moderate income families. This can be done by combining inclusionary ordinances and density bonuses.

Eligibility Requirements for Existing Loan Programs

The following is a brief summary of the eligibility requirements for various loan programs administered by the City of El Centro as of March 1979.

COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG) LOANS

INCOME LIMITS:	None
LOAN LIMITS:	$27,000 (discretionary)
INTEREST RATE:	4% for 80% or less of HUD median, 6% over
USE OF PROCEEDS:	Housing rehab and improvements (discretionary)
TERM OF LOAN:	varies - up to 15 years; it may be deffered.
AVAILABLE LOCATION:	Planning Area #3 *
LENDER:	Crocker National Bank
BRIEF SUMMARY:	Staff does all packaging, bids, and construction inspection; must be used for incipient and code violations (50%) and up to 50% G.P.I.

C.D.B.G. GRANTS

INCOME LIMITS:	Low income and elderly
GRANT LIMITS:	up to $3,500 (discretionary)
INTEREST RATES:	Does Not Apply (D/N/A)
USE OF PROCEEDS:	Actual and incipient code violations
AVAILABLE LOCATION:	Planning area #3
LENDER:	D/N/A
BRIEF SUMMARY:	Recipient must be owner-occupant and be financially unable to secure and/or support a low interest loan. Staff assumes all loan packaging, counseling, etc.

COMBINATION LOAN AND GRANTS (CDBG)

Will be determined on an individual basis for owner-occupant only

SECTION 312 LOANS

INCOME LIMITS:	95% of HUD median
LOAN LIMITS:	$27,000 per S.F.D. See Chapter 7 in Handbook for multi family dwellings ($12,000 per unit).
INTEREST RATE:	3%
USE OF PROCEEDS:	Code and incipient violations 50%; GPT 50%
TERM OF LOAN:	20 years
AVAILABLE LOCATIONS:	Planning areas 2 and 3
LENDER:	Federal Government
BRIEF SUMMARY:	Staff assumes all loan packaging, counseling, inspection, etc. Can be used to refinance (up to $27,000). It must be bankable.

California Housing Finance Agency
C.H.F.A. TITLE I REHAB LOANS MORTAGE ASSISTANCE (M.A.) Area

INCOME LIMITS:	120% of HUD median
LOAN LIMITS:	$15,000 for S.F.D.
INTEREST RATES:	Presently 9% +
USE OF PROCEEDS:	Improvements include repairs, alterations, or improvements that substantially protect or improve the basic livability or utility of existing structures.
TERM OF LOAN:	15 year for S.F.D.
AVAILABLE LOCATION	Mortgage Assistance Area - city wide
LENDER:	Security Pacific Bank
BRIEF SUMMARY:	Staff assumes initial packaging, counseling, and inspection services. Security assumes credit investigation, verification, preparation, and processing of loan payments. Must be bankable and owner occupied.

California Housing Finance Agency (C.H.F.A.) TITLE I REHAB LOANS C.R.A.

INCOME LIMITS:	None
LOAN LIMITS:	$15,000 for Single Family Dwellings (S.F.D.); units for multi-family; not to exceed $25,000
INTEREST RATE:	Presently 9%
USE OF PROCEEDS:	Improvements include repairs, alterations, or improvement that substantially protect or improve the basic livability or utility of existing structures.
TERM OF LOAN:	15 years for S.F.D.; 12 years for multi-family
AVAILABLE LOCATION:	Planning Area #3
LENDER:	Security Pacific Bank.
BRIEF SUMMARY:	See summary immediately above. It must be bankable.

C.H.F.A. REFINANCE AND REHAB M.A. AREA

INCOME LIMITS:	120% of HUD median
LOAN LIMITS:	Currently $60,000
INTEREST RATES:	Currently 8%
TERM OF LOAN:	25 years
AVAILABLE LOCATION:	City wide
LENDER:	Private lender with FHA-VA or conventional
USE OF PROCEEDS:	Must use at least 20% of loan for rehab Remainder can be used to refinance
BRIEF SUMMARY:	Staff refers owner to private lender. Participates in city verifications, i.e. rental agreements and fair lending/affirmative action, and normal inspection and counseling. It must be owner occupied and Must be bankable.

C.H.F.A. PURCHASE AND REHAB M.A. AREA

Same as immediately above

USE OF PROCEEDS:	Must use at least 20% of proceeds for rehab Remainder used for purchase, i.e., older unit sells for $40,000, rehab $20,000 Total $60,000 ; must be bankable.

C.H.F.A. PURCHASE M.A.

INCOME LIMITS:	120% of HUD median
LOAN LIMITS:	Presently $60,000
INTEREST RATES:	Presently 8%
USE OF PROCEEDS:	Purchase of new or existing housing. New must be an approved subdivision.
TERM OF LOAN:	Determined by VA/FHA/ etc.
AVAILABLE LOCATION:	City wide
LENDER:	Private lender
BRIEF SUMMARY:	Staff refers to lender only; must be S.F.D. purchase; must be bankable.

C.H.F.A. PURCHASE AND REHAB Concentrated Rehab. Agency (C.R.A.)
C.H.F.A. REHAB AND REFINANCE C.R.A.

Same as above except:

INCOME LIMITS:	None
AVAILABLE LOCATION:	Planning Area #3
USE OF PROCEEDS:	Can be used for one-four units; must be bankable.

C.H.F.A. PURCHASE C.R.A.

INCOME LIMITS:	None
LOAN LIMITS:	$60,000 for S.F.D; one to four determined by lender

INTEREST RATES:	Presently 8%
USE OF PROCEEDS:	Purchase of new or existing housing; new must be approved subdivision
TERM OF LOAN:	Determined by VA/FHA etc.
AVAILABLE LOCATION:	Planning Area #3
LENDER:	Private lender
BRIEF SUMMPARY:	Staff referes to lender only; can be S.F.D. or one to four unit purchase; must be bankable

SPECIAL SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS (S.C.A.G.)
C.D.B.G. WITH C.H.F.A. FINANCING

Two projects in planning stages to be located outside of pockets of concentration of low to moderate income. Can include land write down, spot rehab, purchase, rehab, and resell, etc. At discretion of Director. Possible eligible activities should be referred to same. $138,000 available for low to moderate income. All terms are determined on a case by case basis.

Other programs where assistance is available:	Section 235 new construction for developers Section 8 rental assistance and/or rehab. - refer to Housing Authority.

GENERAL IMPLEMENTATION METHODS

Certain implementation methods already exist and are readily available for use; in some cases such tools may have a long history as workable techniques, while others, although available, need further development and/or refinement to determine their local applicability.

Following is a partial listing and brief description of various available implementation methods. This listing is intended as a beginning. A subsequent report should expand the list as new techniques and programs (such as inclusionary ordinances) evolve to provide greater opportunities for accomplishing the goals and objectives of this element of the General Plan.

In the future, there may be additional means to assist in implementing various portions of the plan.

Adoption of Plans and Policies

The initial step, and possible the one having the most impact in implementation, is the official adoption of the Housing Element by the Planning and City Council. By this action, the bodies will declare this plan to be their policy for the future and thus provide guidelines to the operating departments of City government as well as to the private sector of the community, Therefore, the adoption ot the Housing Element by the Commission and Council is the most effective initial action in putting this program and the others based on it into operation

Zoning

Zoning is one of the more important tools available for implementing a city-wide housing plan. In many cases, plan implementation

will require some changes of zoning. This can be initiated by the City Council, the Planning Commission, or by the owner or lessee of property in the area proposed for change. These changes should be part of the total planning for areas as they are required and where they are consistent with the land use, circulation, public facilities and utilities elements of the General Plan. Planned unit development techniques should be encouraged.

Capital Improvement Programming

The City carries out numerous Capital Improvement Programs each year. Capital Improvement Programming affords an opportunity to evaluate the comparative importance and advantages of various projects and to schedule them over an extended period of time. Considerable planning is also necessary to insure coordination among the various projects.

The location and nature of public improvements such as streets, parks and public buildings are a major factor in environmental quality. Expenditures for these public improvements should be allocated in accordance with a planned program which balances needs and priorities against available resources and in accordance with the provisions of the General Plan.

Capital improvement planning should not be limited to only those things which require funds from the City budget since significant projects carried out by other public agencies can have a great effect on timing, financing and location of City projects. The Planning Department and Commission would review and recommend improvements in the site plans for these projects to insure that they are in reasonable conformity with the goals and objectives of the General Plan.

Management of Public Property

The evaluation and coordination by the Planning Commission of the location, character and timing of public facilities construction can be helpful in achieving maximum environmental quality. The maintenance of the quality of a residential area can be greatly affected by the timely provision of public facility and utility developments.

The municipal government is thus in a position to influence the physical development of an area through its provision and management of public property and services. The uses to which public lands are devoted and the nature and quality of the improvements thereon can serve either to stimulate or to depress the interest and efforts of homeowners to care for their private property. For example, a high quality of maintenance and the improvement of public buildings and other public property in low-income areas encourages local residents to upgrade their homesites and the neighborhood.

FUTURE PLANNING AREAS

Pressures for expanding development beyond the existing city boundaries are strong. Several tracts of housing have already been built amidst agricultural land in various areas within the city's area of influence.

Anticipating the extension of the current city boundaries, five future planning areas have been established. Segments of each planning area, immediately adjacent to the existing city limits, would be developed in an initial phase. Periphery development would occur in a second phase. The time frame for each phase is dependent on the growth trend that emerges. The following narration will describe the expected planning areas in terms of location and anticipated public facilities and housing development standards based on a growth management plan. A variety of housing types could result in each new planning area as long as the overall density has not been exceeded.

Planning Area 9

Bounded on the east by La Brucherie Road, on the south by Interstate 8, on the west by Austin Road and on the north by Cruickshank Road, Planning Area 9 is located on the western side of the city.

A sewage treatment plant located directly north negatively impacts this new planning area. Housing development should be discouraged near its periphery.

Islands of suburban housing clusters have been built amidst intensely used agricultural land. Envisioned for this western section are a variety of relatively large lot developments that would be in

keeping with the existing rural character. A provision will also be made for some standard single family houses and apartments in order to allow a mixture of income groups.

Plans for public facilities to accommodate this future density include two parks and two elementary schools.

Planning Area 10

Situated south of Interstate 8, Planning Area 10 is delimited on the west by Austin Road, on the east by Eighth Street and on the south by McCabe Road.

A water treatment plant surrounded by agricultural land is located below Imperial Avenue and south of Interstate 8. Land due west of the treatment plant may be a prime location for single family homes, an elementary school or a park.

Since a major portion of this planning area is currently in agricultural use, future single family housing development will be situated on lot sizes slightly larger than those guided by present standards. Some high commercial and multiple unit residential uses are planned, as well.

Anticipated public facilities for Planning Area 10 include two parks and one elementary school.

Planning Area 11

Planning Area 11, located in the southeastern corner near the current city boundaries follows an irregular pattern. North of Interstate 8, Planning Area 11 is delimited on the west by Eighth Street, on the east by Dogwood Road, and on the north by the city limits. South of Interstate 8, the western boundary continues down along Eighth Street, on the east

along Dogwood Road and the southern limit is marked by McCabe Road.

South of Chick Road, larger single family lots will be developed in order to keep a suburban character. Approximately 64 acres bounded by the Railroad, Interstate 8, Fourth Street and Ross Road are under pressure for immediate development. Envisioned for this area is a mixture of standard multiple dwelling units, single family homes and highway oriented commercial development.

Planning Area 12

Planning Area 12 is located east of the city, bounded by Dogwood Road on the west, State Highway 111 on the east and Interstate 8 on the south. The northern boundary line follows an irregular diagonal line beginning at State Highway 111 and extends downward and across to Dogwood Road and Ross Road.

A substantial amount of large lot residential development already exists in this area and future residential uses will be developed to follow the existing standards. Near Dogwood Road most of the land has been classified as R-1 for standard single family dwellings. In the southeasternmost corner a large section has been reserved for existing trailers.

Public facilities proposed for this planning area include three elementary schools, three small parks and one large park.

Planning Area 13

Located north of the city along the city boundaries, Planning Area 13 is delimited on the west by the Railroad, on the north by Cruickshank Road and on the east by Dogwood Road.

Classified for standard single family lot development, Planning Area 13 will probably be the last section developed due to its poor accessibility. Its proximity to existing public facilities eliminates the need for any additional schools or parks in this area.

CIRCULATION

The circulation element of the General Plan covers the various forms of public and private transportation used to move goods and people within and through the city. This includes the existing and proposed thoroughfares as well as other transportation facilities. Specific recommendations have been established for the public thoroughfares but sections covering other elements of the transportation system are more general in nature. The recommendations included here are in accordance with the overall land use plan, the public facilities element of the General Plan and the Growth Management Plan.

The objectives of the circulation element are as follows:

To provide a safe, attractive, adequate, and efficient road system for the movement of vehicles, people, and goods throughout the city and its area of influence

To initiate transportation improvements needed to insure the continued economic vitality of the city and Imperial Valley as a whole.

To accomplish these objectives, the following principles are proposed:

To provide a variety of street types specifically designed to serve the various traffic needs in the area, including freeways, major streets, secondary streets, collector streets and local streets

To provide convenient access to all developed or readily developable property in the city

To maintain the traffic capacity and desired quality of flow in the thoroughfare system by prohibiting, where necessary, the parking of vehicles within roadways and the limiting of direct access to private property (This is based on the premise that traffic movement is the primary function of the thoroughfare system, while vehicle storage and direct vehicular access are secondary.)

To insure that each thoroughfare and its terminal facilities, including parking, be designed with sufficient capacity to accomodate anticipated traffic based on intensity of present

and projected land use

To assure traffic safety in residential areas by excluding those uses which generate non-residential traffic and, where possible, redesigning streets to discourage through traffic

To regulate the intensity of land use to keep the traffic generated in balance with the capacity of the arterial

To integrate the proposed street system with the existing road system

To initiate a tree planning and landscaping program at the entrances to the city along the thoroughfares to improve the visual appearance of the city

To provide a complete interchange at Imperial Avenue and Interstate 8 so that the area to the south of the freeway can be served adequately when additional land is needed to accomodate future population growth

To provide a framework for a street system serving the presently undeveloped areas around the city

To initiate actions on transportation-related projects and programs affecting both the City and the Valley as a whole

Regional Transportation Links

The city is currently linked to other cities in the region and to other parts of California by a number of highways, rail lines and a freeway. The city is also served by Boley Field, an airport located about two miles north of the city limits.

The most important highway links are:

Interstate 8: This freeway provides for east-west traffic along the southern portion of the city with off/on ramps at Imperial Avenue, Fourth Street, and Dogwood Avenue. This route links with the city of San Diego, Arizona, and with Route 111 going to Calexico/Mexicali.

Route 111: This north-south route is on the extreme eastern edge of the city's area of influence, extending from Calexico on the border, to Indio, Palm Springs, and beyond. A proposal to upgrade this route to a limited access scenic highway has been mentioned by a number of sources. Such a route would be attractive to tourists and other visitors coming from the Los Angeles region and could become a very important factor in future tourist-oriented development. (Route 111 is designed as a freeway on the General Plan.) This highway is currently developed

FIGURE 26


RIVERSIDE COUNTY
SALTON SEA
IMPERIAL COUNTY
DECEMBER 1977
SAN DIEGO COUNTY
CALIPATRIA
WESTMORELAND
BRAWLEY
IMPERIAL
HOLTVILLE
EL CENTRO
CALEXICO
US NAVAL AUX. AIR STATION
FISH CREEK MOUNTAIN
SUPERSTITION MOUNTAIN
SAND HILLS
PILOT KNOB
CARGO MUCHACHO MTS.
COLORADO RIVER
ARIZONA
MEXICO

to limited access standards between Interstate 8 and Calexico. However, CAL TRANS has no provisions for further upgrading in its current six year plan.

Route 86: This route is currently the major one for visitors coming from the north and links El Centro with several other cities in the Imperial Valley. This highway may become even more important in the future as it links two major geothermal areas and passes close to the Salton Sea geothermal area.

Much of the current highway is two-laned. Several improvement projects have been scheduled by CAL TRANS in its current six year program but a full-scale conversion to a limited-access four lane highway is not planned before at least 1984. Such an upgrading will eventually make the city and Imperial Valley more accessible to the heavily populated areas around Los Angeles and could have a major impact on the number of recreation visitors coming to the Valley.

The Valley is served by a number of transportation links other than roads. The Imperial Valley Airport is served by two scheduled airlines with routes to Los Angeles, San Diego and Yuma. The airport is currently unsuitable for jets and a number of factors may forestall its upgrading and expansion if future air traffic warrants. The airport is, in large part, surrounded by residential and industrial development and Route 86. The existing runway is aligned at odds with prevailing wind conditions.

The Naval Air Station, about 7 miles west of the City, could be an alternative for future airport expansion if a joint use agreement can be worked out.* It is suggested that the City explore this possibility. It is also suggested that a study of the development effects of such a proposal be undertaken. This study should cover techniques to insure that future development around the air station

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* An airport suitable for jet transports could play an important role in the region's agriculturally-based economy by making possible shipments of high value perishable produce to major eastern markets.

is compatible with its use as both a military and civilian airport.**

Furthermore, the area between the air station and the city will come under increased pressure for development if the air station becomes a major civilian airport. This may draw new residential development to the west into high quality agricultural lands and reinforce current westward population growth trends. This could make efforts to balance development around the city center unsuccessful. It is recommended that planning studies and proposals for the area between the city and the air station be undertaken if and when a joint use agreement is worked out. These studies should also include an investigation of the present airport's future role in the region.

Two rail lines currently serve El Centro. A Southern Pacific route links the city to Mexico via Calexico, and to Los Angeles (and ultimately the entire country). This line is still used extensively for agricultural shipments and may also be used in the future as a right-of-way for geothermal pipelines to industrial plants in El Centro. A San Diego and Arizona route links El Centro to San Diego but is not currently in operation beyond Plaster City because of flooding damage. This rail line may be abandoned even though it is still an important shipping route to the coast for agricultural products.

The City's Primary Circulation System

The City has adopted a Federal Aid Urban Street System which serves as a master plan of streets and highways. In order to accomplish the objectives and principles proposed, the General Plan

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** Of major concern are the surrounding area's land use patterns and air traffic noise levels.

establishes the following street types:

Freeways: These controlled-access routes carry unimpeded traffic between major traffic generators such as large commercial, industrial, recreational and residential districts. El Centro is currently served in an east-west direction by Interstate 8. It is proposed that the City initiate efforts to have the full length of Route 11 upgraded to a freeway as well.

Street System: The elements of the street system are designed to provide for through-traffic movement between local areas and across the city, with direct access to abutting properties, subject to necessary controls on entrance, exits and curb use.

Arterial streets are intended to provide for the movement of through-traffic between major traffic generators such as the Civic Center, the Central Business District and other commercial centers, and distribute traffic from freeways to less important arterials serving residential areas directly. Insofar as possible, direct vehicular access to abutting properties should, on these arterials, be at limited intervals.*

Curbside (on street) parking should be permitted only during non-peak hours when the total roadway is not needed for the safe and smooth flow of traffic. Major arterials are designed to accomodate four to six lanes of moving traffic. Major intersections are controlled by traffic signals. Where possible, landscaped median strips should be provided to channel traffic, to facilitate left turns, and to improve street appearance. Fourth street and Imperial Avenue have the highest priority for median strips.

The collector street system collects and distributes traffic to and from major highways and local streets. Collector streets also serve secondary traffic generators such as shopping and business centers, schools, parks, and high density residential areas, as well as large single family districts.

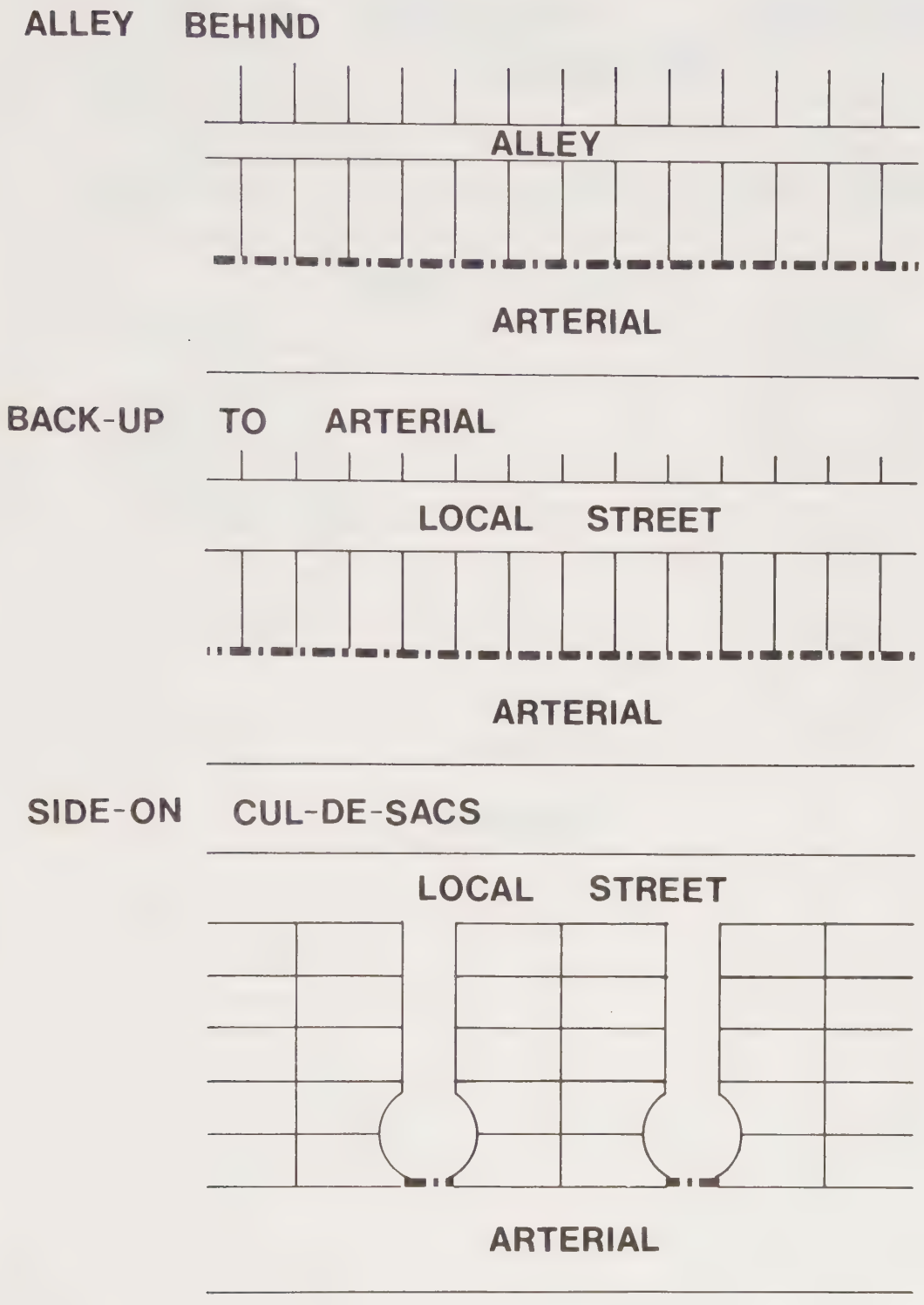
The General Plan proposes that the following routes be designated as arterials and collector streets.

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* Some of the best devices for limiting access without demanding excessive right-of-way dedication is through the use of:
  a) alleys to the rear of property
  b) backup to the arterial, with access from internal streets
  c) side on cul-de-sacs, with no access to arterials
  d) cul-de-sacs with backup to the arterial
(See Figure 27)

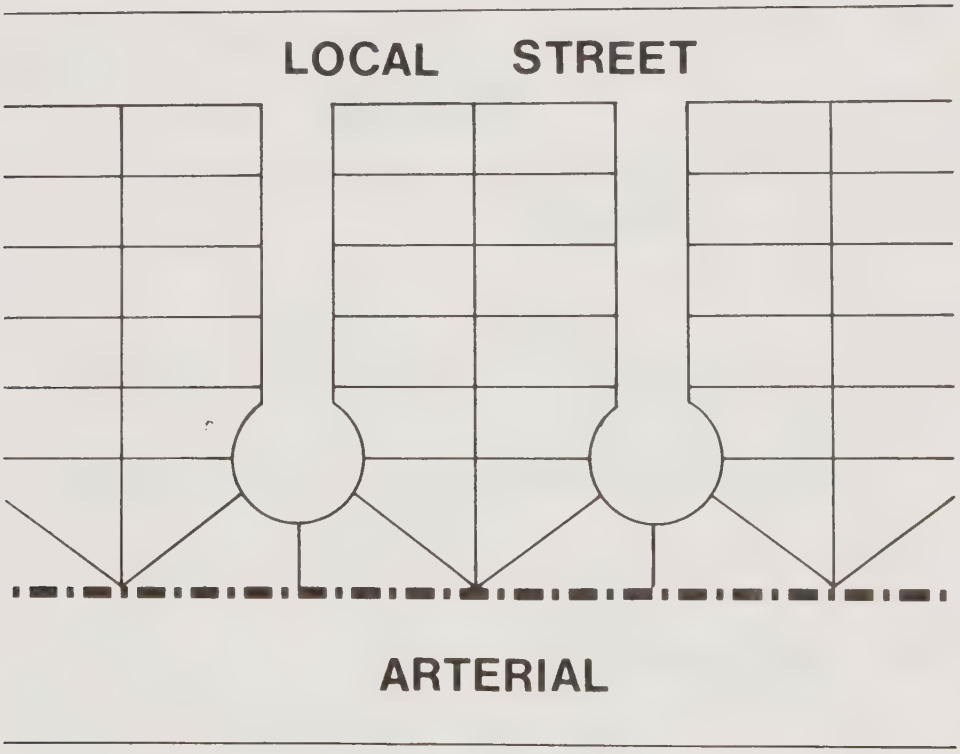
FIGURE 27

LIMITING ACCESS TO ARTERIALS



LIMITING ACCESS TO ARTERIALS

CUL-DE-SACS WITH BACK-UP TO ARTERIAL



ARTERIALS

Existing

North-South

Imperial Avenue
Eighth Street
Fourth Street
Dogwood Road
First Street (between Commercial and Ross)

East-West

Ross Avenue
Main Street
Adams Avenue
Orange Avenue (between Dogwood and Fourth
Hamilton (minor-between Fourth and La Brucherie)

Proposed

North-South

Imperial Avenue south of I-8
La Brucherie Road*
Austin Road
Extension of Cooley Road between Main and Ross

East-West

Danenberg/Chick/Nuffer Road
Orange Avenue (extended east of Dogwood)
Villa Avenue **

* a portion is already an arterial

** previously proposed as collector street

COLLECTORS

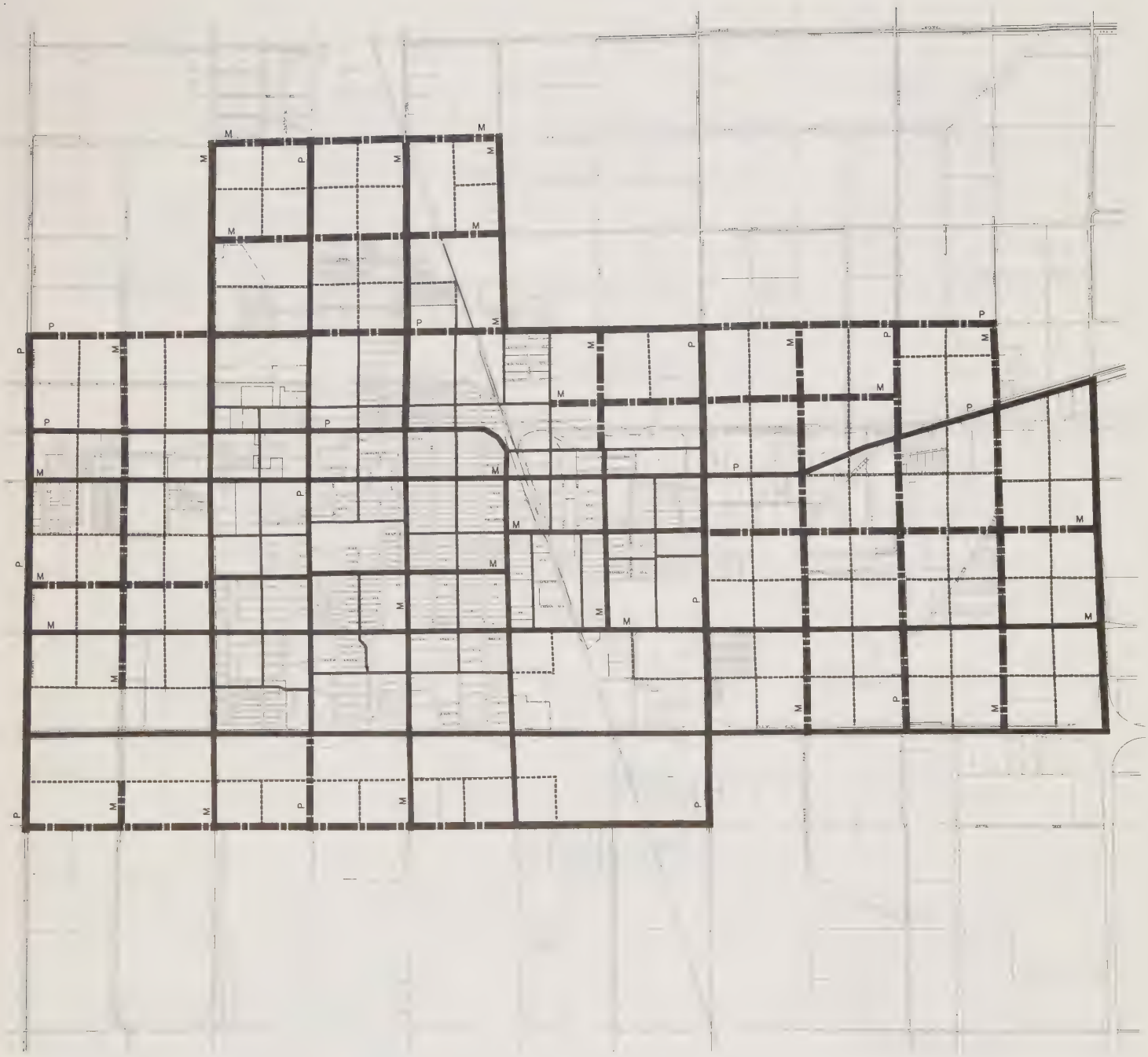
Existing

North-South

Waterman Avenue
Twelfth Street
Sixth Street
Third Street
Hope Street
Fourth Street (between Euclid and Villa)
Second Street (between Orange and Ross)

Aurora Drive
Hamilton Avenue
Heil Avenue (between Dogwood and First)
Brighton Avenue (between Eighth and Imperial)
Orange Avenue
El Hogar/Euclid Avenue
Commercial Avenue east of railroad to City limits
Horne Road (between Fourth and Eighth)
Brighton Avenue (between Eighth and Imperial

FIGURE 28



EXISTING ARTERIALS — PROPOSED ARTERIALS — EXISTING COLLECTORS — PROPOSED COLLECTORS

P- PRINCIPAL ARTERIALS
M- MINOR ARTERIALS

STREET SYSTEM

CITY OF EL CENTRO PLANNING AREA

EL CENTRO PLANNING COMMISSION

COLLECTORS

Proposed

North-South	East-West
Unnamed road west of Rt. 111	Continuation of Wake Avenue between Imperial and Fourth, South of I-8
Unnamed road east of Dogwood (near Adler Canal)	Ocotillo Drive*
	Lincoln

* a part is currently designated as collector

To facilitate the safe and efficient movement of traffic, the following future grade separations and crossings are proposed:

A grade separation at the intersection of Eighth Street and the San Diego & Arizona Railroad

A grade separation at the intersection of Imperial Avenue and the San Diego & Arizona Railroad

A grade separation at the intersection of Ross Avenue and the Southern Pacific Railroad

A grade separation at the intersection of State Street and the Southern Pacific Railroad

The first two of these proposed grade separations will conflict with the current alignments of Woodward and Scott Avenues because of the need for lengthy overpass embankments. These grade separations will not be needed if the San Diego & Arizona right-of-way is eventually abandoned. However, the other proposed improvements will be necessary if adequate access to the undeveloped and developed areas east and northeast of the Central Business District is to be provided.

The City's Secondary Circulation System

The local street system provides for direct access to abutting land and for local traffic. The local street system has been divided into streets providing both commercial-industrial access and those

providing residential access. The physical continuity of the local street systems is not important: local streets only need provide easy access to abutting property and connect with collector streets.* All through-traffic movement should be discouraged on local streets.

Public Transit

The City of El Centro is not large enough or dense enough to warrant a fixed right-of-way transit system. Such systems have extremely high capital costs and are only practical when ridership along a relatively few number of routes is very high. However, there are a number of small scale, variable route, demand responsive approaches to providing transit for those people unable to drive--the very young, the old, and the poor--which are being tried in many large and small cities around the country. Two of these approaches which appear feasible for El Centro are:

Dial-a-Bus: In this approach, small buses are operated much like taxicabs. Individuals requiring transportation call a central dispatcher who arranges for a bus to stop at an appointed time and location. The bus delivers its passengers to their destinations over a variable route arranged so as to pick up other passengers. This maintains passenger loadings and reduces the average cost of the ride. In some cases, a fare is charged. However, a subsidy is needed to keep fares low.

In a variation of this approach, taxicabs are used instead of small buses. Arrangements are made with local cab companies to provide service on a flat-fee-per-ride basis. Local government may totally bear the cost of service or charge passengers a nominal fare.

School Buses: School buses are used only in the morning and evening. The buses sit idle for much of the day. In a sense, this is an under-utilization of a resource with high capital costs. A small town in Connecticut has worked out an arrangement with the local school board whereby the school buses are used to provide transit service to the elderly and others during mid-day hours.

---

* Though physical continuity is not important, some sort of consistent naming system should be used.

Additional labor and maintenance costs are borne by the city and can be partially offset with passenger fares.

It is recommended that the City explore the feasibility of these two transit approaches. Perhaps, school buses could be used in a Dial-a-Bus system reducing the costs appreciably.

Bikeway System

The use of the bicycle as an alternative form of transportation is becoming increasingly popular. In El Centro distances are relatively short and a growing popularity of bicycling can be anticipated.

With the exception of the hottest summer months, bicycling as a mode of transport is feasible in El Centro and should be encouraged. Bicycle parking areas can be established on the street, utilizing existing curb parking spaces. One vehicle space can accomodate up to 16 bicycles.

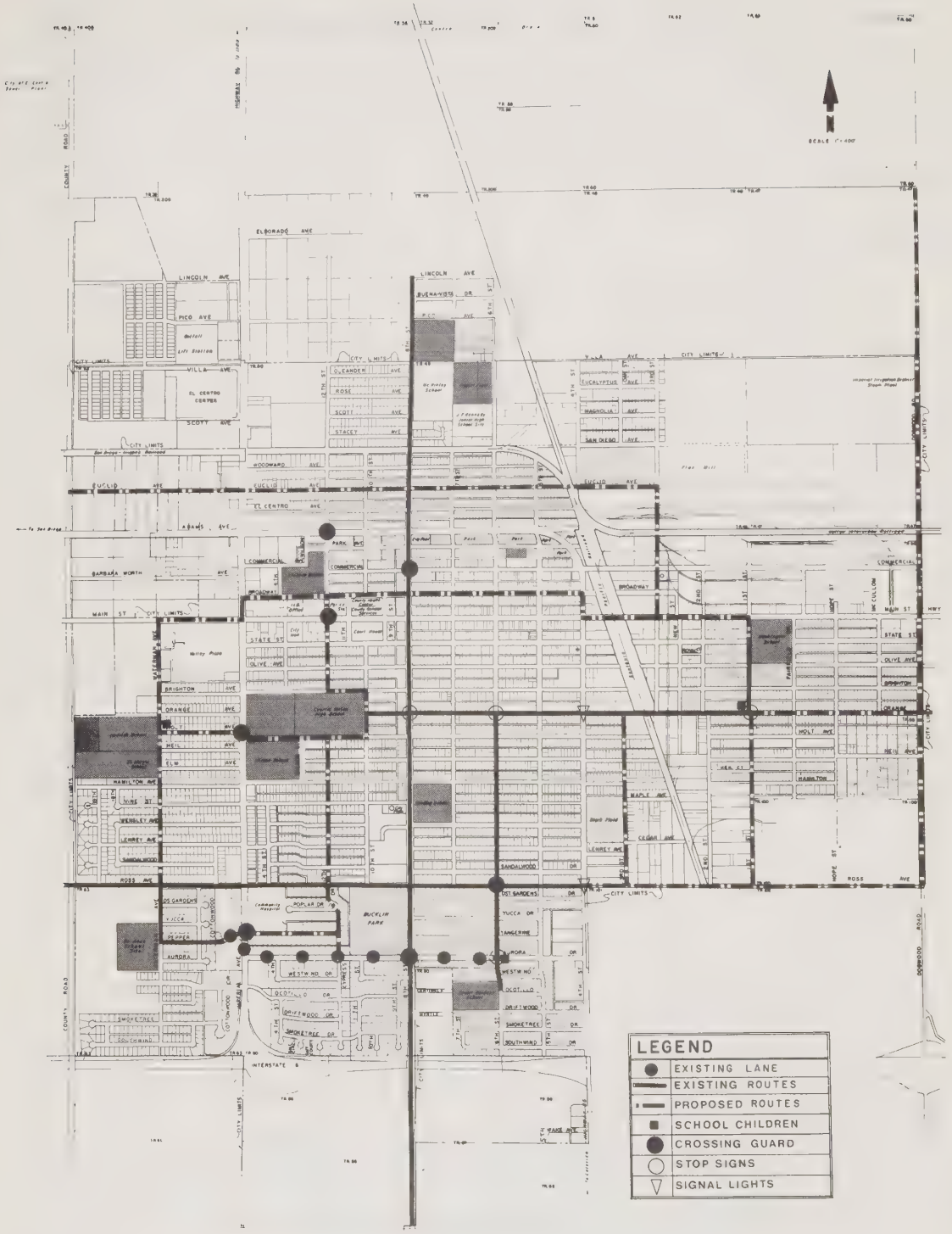
The establishment of a bikeway system separated from vehicular and pedestrian traffic is a desireable goal. However, in a mature well-developed community this is not accomplished without cost. An upgraded system of bikeways will require community support. The system could involve any or all of the following:

Removal of on-street (curb) parking
Use of sidewalks and parkways in low density areas
Separated and specially constructed bikeways

As new areas of the city develop, it should be possible to include separated bikeways where appropriate. In the older, well developed sections joint use of the street right-of-way (signed bike routes) and restricted bikeways (prohibited curb parking, use of sidewalks, etc.) should be considered.

The General Plan indicates proposed routes for bikeways. These have been designated by the City and are still being worked out more

FIGURE 29



BICYCLE ROUTES

EL CENTRO

completely.*

The City of El Centro has an extensive network of alleys totaling approximately twenty-two miles in length. In the past, alleys were required along with all residential, commercial and industrial development including single family home construction. Presently, alleys are no longer required for low density residential uses. Approximately two-thirds of the single family residential units built prior to 1977 contain alleys. Most new, low density residential subdivisions are now built without alleys.

Much has been written regarding the advantages and disadvantages of alleys in relation to such topics as police and fire protection, refuse collection, lot utilization, urban land consumption, maintenance and litter problems, to name a few. Current City regulations require a minimum of paved, twenty foot wide alleys when incorporated into a local subdivision. In addition, a series of paving and other alley improvements are underway in established areas of the City where there are inadequately constructed or maintained alleys. It is further recommended that ongoing alley improvement projects be maintained to insure all weather use of existing substandard facilities.

Area of Influence

The Growth Management Plan proposes a process of phased expansion into the area surrounding the city. Currently, much of this area is only served by widely spaced county roads and is relatively inaccessible to the central portion of the city. It will be necessary to

---

* For a thorough study of bikeways which includes cost estimates and technical information, refer to the report, "Bikeway Planning Criteria and Guidelines," prepared by the Institute of Transportation and Traffic Engineering, April 1972. Also see, Bike Route Standards: Highway Design Manual (Section 7-1000) State Department of Transportation CALTRANS, 1974, and Recommended Standard Route Signs and Markings, State Department of Transportation, Division of Highways, (mimeo, Undated).

designate the routes of several new roads and to extend and upgrade a number of existing roads. The above proposals for arterial and collector streets reflect this eventual need.

The land use plan is intended to balance growth around the Central Business District and to insure that such growth expands into the area of influence in an orderly and efficient way. A long-range program of road improvements would be one tool that could be used to implement the plan. Extending the street system into areas designated for initial expansion, while delaying road extensions to more remote areas, would help insure that residential development occurs as planned. However, much of the extension of the street system is done by private developers as part of the subdivision process. The City can, through the General Plan, designate where major streets are to be constructed, but cannot designate when they will be. It is only when public monies are involved does the City have direct control on the timing of street improvements or construction.

One such decision involving public monies is the proposed improved freeway overpass at Imperial Avenue which the City is currently seeking in negotiations with CALTRANS. It should be pointed out that, if the modified overpass is constructed so that Imperial Avenue can be extended south, a large area of undeveloped land will be made available for subdivisions and commercial development. The present trend of development to the southwest will be reinforced and efforts to distribute growth to other areas around the existing city are likely to be less effectual.

PUBLIC FACILITIES

El Centro's population is expected to increase by 10,000 to 30,000 people over the next twenty years. If El Centro continues to grow at its present moderate rate, the city's population will increase by 10,000 people by the end of the century. However, a significant amount of geothermal energy development is expected to occur within the next decade and this growth trend may be accelerated. The land use plan projects an ultimate population of about 30,000 people living in the city's area of influence. This growth in population will increase the demand for a variety of public services and facilities.

The public facilities element examines both current and future public facility needs. The overall objective of the element is as follows:

> To coordinate through the General Plan, the development of public facilities within the city and its area of influence, including fire stations and other public service buildings for the purpose of protecting the health, safety, and general welfare of all citizens.

The public facilities element also provides for the educational, recreational, cultural, and governmental requirements of the community. Under this category are included parks and recreational facilities, public schools, libraries, and the civic buildings.

In order to implement the overall objective and to insure the provision of needed public facilities, the following principles are proposed:

> To coordinate the expansion of public facilities with the land use and growth management plan
>
> To locate facilities where they will provide maximum services with the greatest efficiency.

This element is divided into four parts. The first section focuses on parks and recreation and examines existing needs within the city.

The second section identifies recent population patterns and school enrollment trends within the current city boundaries.

The third section examines current needs for a variety of other community facilities, including fire stations, sewer lines, cultural facilities and water lines.

The fourth section discusses how future growth will increase the need for additional parks, schools and other public facilities.

SECTION I

PARKS AND RECREATION

In developing a program for the maintenance and expansion of public parks and recreational facilities within the existing city, the following overall objective is proposed:

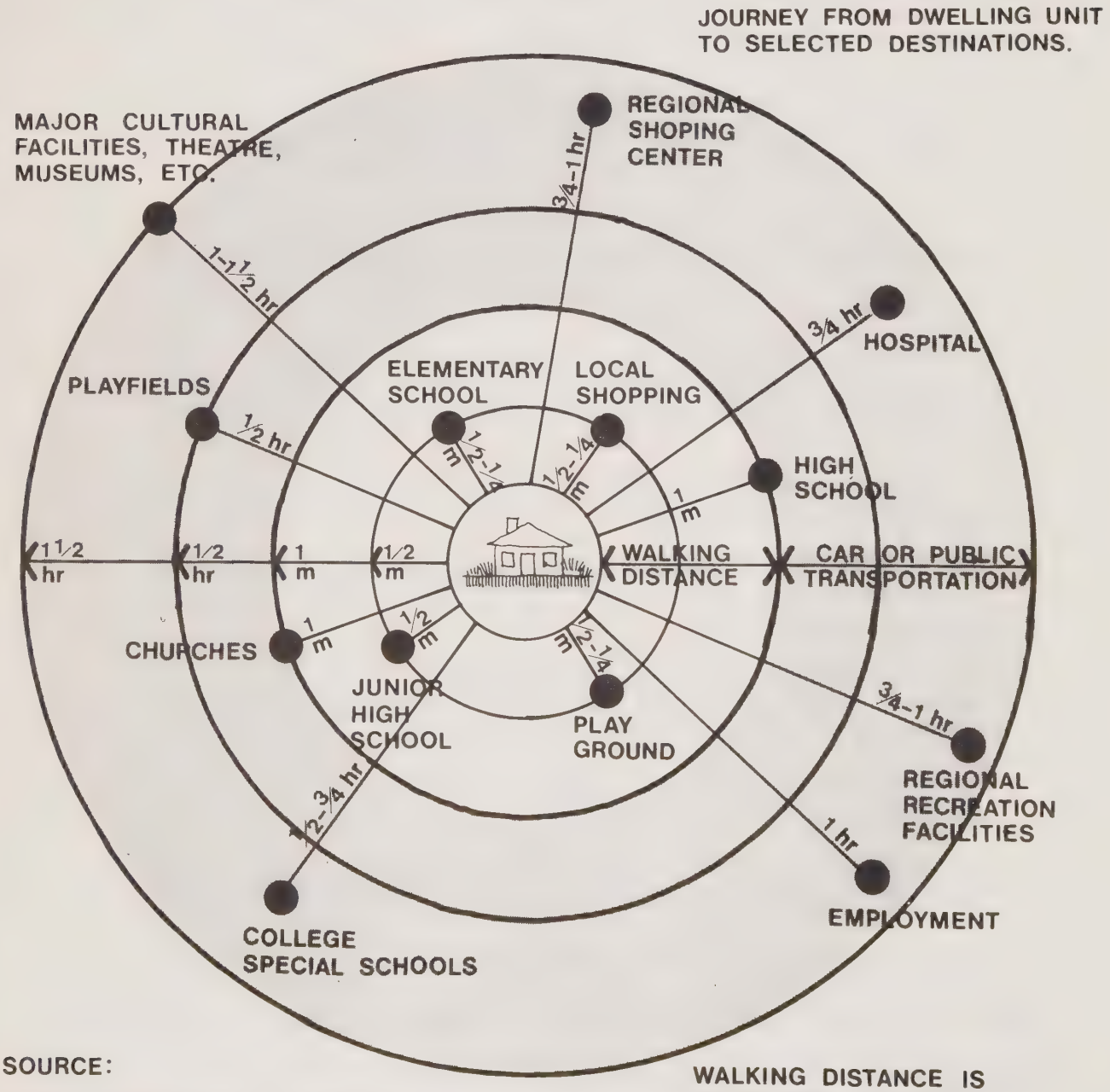
> To establish land areas and programs for the types of recreational activities and facilities that will provide adequate year round public recreation for all age groups.

In order to pursue this objective, the following principles are proposed:

> To provide accessible playground and public recreation facilities within suitable distance of all residential areas of El Centro
>
> To plan for the appropriate expansion of existing recreation facilities and park areas
>
> To develop cultural and recreational facilities oriented toward the special needs of the various ethnic and age groups within the community
>
> To continue high standards of maintenance for facilities and grounds in the public park land with the greatest efficiency in order to insure that tax dollars are spent most effectively.
>
> To welcome and encourage cooperation with the private sector as an alternative to public action.
>
> To provide in the zoning and subdivision regulations an adequate outdoor recreation space in all residential developments.

The General Plan provides land for two types of public parks, usually labeled as neighborhood parks and community parks. The neighborhood park is intended to provide opportunities for limited types of active and passive recreation within the neighborhood. These parks are designed for family recreation and provide special areas for play-lots

MAXIMUM DISTANCE FOR COMMUNITY FACILITIES



SOURCE:

URBAN DESIGN AND PLANNING CRITERIA,

WALKING DISTANCE IS MEASURED IN MILES.

CAR OR PUBLIC TRANSPORTATION IS MEASURED IN TIME.

(for pre-school children), playgrounds for school age children and a neighborhood center for leisure, educational, cultural and social use. In areas populated by senior citizens, the design of the park, facilities and programs should be oriented toward meeting the needs and desires of older people. Wherever possible, these facilities should be coordinated, and there should be year round recreational activity programming.

A neighborhood park facility serves a population of between 3,000 and 6,000 people with a service area of one half to one mile. A neighborhood park should, whenever possible, be located near or adjacent to an elementary school for joint school and community use. It should contain 3 to 5 acres of land when used in conjunction with school or from 5 to 10 acres otherwise. The neighborhood park should contain the following elements: picnic areas within a passive park setting; open spaces for special neighborhood events and play lots for small children. The design of the parks and the facilities should have variety in order to offer a multiplicity of opportunities for recreation to local residents.

Community parks are intended to provide a wider range of recreational opportunities for the residents of a group of neighborhoods. Because a greater population will be served by the community park, many more specialized activities can be supported than are feasible in a neighborhood park. This type of facility provides recreational facilities to serve a population of 15,000 to 30,000 people. A community park should be central to a service area and be within 2 miles of the residents to be served. It should contain a land area of between 20 and 50

acres and include facilities provided in the neighborhood park. In addition, playfields for older children, places for organized sports, paved areas for court games and group picnic and barbeque areas should be included. The park should have large areas for special events, day camping areas, nature study areas, passive recreational areas, and if possible, a community center building for social and cultural events. Swimming pools are often included in these large complexes.

Special Interest Parks

Park areas should be provided for tennis courts, little league baseball, and for other special athletic events which find support in certain portions of the city.

Existing Parks

Shown in Table 32 is an inventory of park areas within the City of El Centro. The total acreage of parks is about 80 acres. Assuming the city's population is approximately 23,000 people, there are about 3.4 acres of park land for each 1000 people, a figure somewhat below the accepted minimum standard of four acres per 1000 people. However, because several parks are built in conjunction with schools, thus increasing effective park acreage, the present total inventory of park lands is adequate for the city's needs. However, the geographic distribution of park lands within the city is quite uneven, as indicated in Table 33. Furthermore, actual park lands available in four planning areas are less than indicated because the totals include parks which are not fully developed.

TABLE 32

City-Wide Inventory of Park Lands

Parks	Acres
Frazer Field +	3.55
Adams Park	9.30
McGee	5.31
West Park +	4.73
Stark Field	11.44
Bucklin *	20.83
Ward Swarthout Park	15.49
Desert Gardens **+	3.43
West Main **	2.60
Eastside Greenbelt **	1.38
North Park	2.43**
Total	80.49

*Community Park

**Undeveloped

+ Built in conjunction with a school

TABLE 33

Geographic Distribution of Park Lands

Planning Area	Park Acres	Approx. Population	Approx. Acres/1000
1	3.55	3200	1.1
1A	15.49	500	31.0
2	9.30	2700	3.4
3	1.38	2200	0.6
4	3.55	2500	1.4
5	-	2100	.0*
6	24.26	4200	5.8
7	4.73	1900	2.5
8	2.60	1800	1.4

*However, there are extensive recreational and open space areas in Planning Area associated with the Senior and Junior High Schools.

City Plans in High Need Areas

In planning area 3 the City currently plans to renovate the Community Center within the next three years. As part of this renovation, the City intends to develop a large playing field adjacent to the Center so that the Community Center can further expand as a neighborhood focal point for many social and cultural activities. A gymnasium will also be added. In addition, the land extending east from the end of First Street to the city boundary at Dogwood Road is proposed as a neighborhood park (and as a buffer to industrial use to the south).

In planning area 8 the Lift Station site has been designated for a neighborhood park and a fire station. The park to be called North Park will provide needed recreational opportunities. Tentatively planned are bicycle motorcross and a soccer field. The new fire station will help meet growing safety needs.

The City has also purchased a small parcel (designated as West Main Park) from the State, situated near Main Street and Adams Boulevard in planning area 8. Various alternative recreational uses are being explored. However, the parcel is not suitable for a traditional park because of its small size (2.6 acres) and its location on a busy thoroughfare, away from the majority of residences in the area. Intense recreational uses, such as a skateboard park or a miniature golf course, may be appropriate.

City Plans in Other Planning Areas

The City is developing plans to upgrade Ward Swarthout Park in planning area 1A. The City is now putting in sprinklers and meeting with neighborhood people as part of its efforts to prepare a final development plan. The present plan calls for a regulation size baseball field to accommodate Little League expansion.

In planning area 5 the City has worked out an arrangement with the Girls Club to use the Club, when available, as a neighborhood recreation center. City Staff is currently trying to work out similar arrangements in other parts of the City.

There are currently two public swimming pools within the City. The first, "The Plunge," is located in Adams Park and was recently refurbished by the City. The second, located at Central Union High School, is operated by the City for public use during the summer months.

Future Parks

As the City grows, the inventory of park lands will have to be increased significantly. The General Plan indicates seven new neighborhood parks distributed through the City's area of influence. The Plan also proposes a new community park to be located east of the existing City limits, at the juncture of several canals. This site poses a unique opportunity for a water-theme recreational area. This park should also attract good quality residential development and help achieve the goal of balancing new development around the Central Business District.

The General Plan also proposes a water-feature recreational facility immediately west of the existing water treatment plant. A man-made lake, to serve both as a recreational feature and as a water storage unit, is planned for this development.

EDUCATIONAL FACILITIES

The need for future school facilities is based on projected school enrollments at the anticipated population holding capacity for the city as identified in the General Plan. The responsibility for providing elementary, junior high and high school facilities lies with the El Centro Elementary School District and the Central Union High School District.

The objective of the General Plan is as follows:

> To support the local school districts by making studies to determine the most appropriate location and distribution of school facilities to serve the educational programs for all citizens of El Centro.

In order to implement the above objective, the following principles are established for public educational facilities:

> To protect elementary school plant investments by preserving the character and quality of residential development and by not permitting incompatible or complicating non-residential uses to encroach within school service areas
>
> To coordinate the use of school and park recreational facilities through cooperation to the mutual benefit of service, safety, convenience and economy
>
> To improve the safety of children by requiring sidewalks and well defined crosswalks in areas adjoining and leading to school sites (Wherever appropriate provisions for safe bicycle traffic should likewise be provided.)
>
> To endorse the widest utilization of all school facilities by all citizens.

Facility Standards

Elementary Schools: An elementary school (K-6) should be located on a 10-acre site, central to the residential area it is to serve. The service radius should, ideally, be one-half mile. Thus the school would

be within easy walking distance of elementary school children.

Elementary schools should accommodate between 400 and 600 students and should be served by and have access from local streets within the residential neighborhood. Pedestrian access should be encouraged to optimize convenience and safety.

Junior High Schools: Junior high schools (7-8 grades) should be located on 25-acre sites, located as centrally as possible within the areas they are to serve.

Junior high schools should be designed to accommodate between 1,200 and 1,500 students. The large area served requires that access be planned from a secondary street.

Wherever possible, junior high schools should be located adjacent to public recreation facilities so that the joint use of both facilities will be possible by the schools and the recreational department.

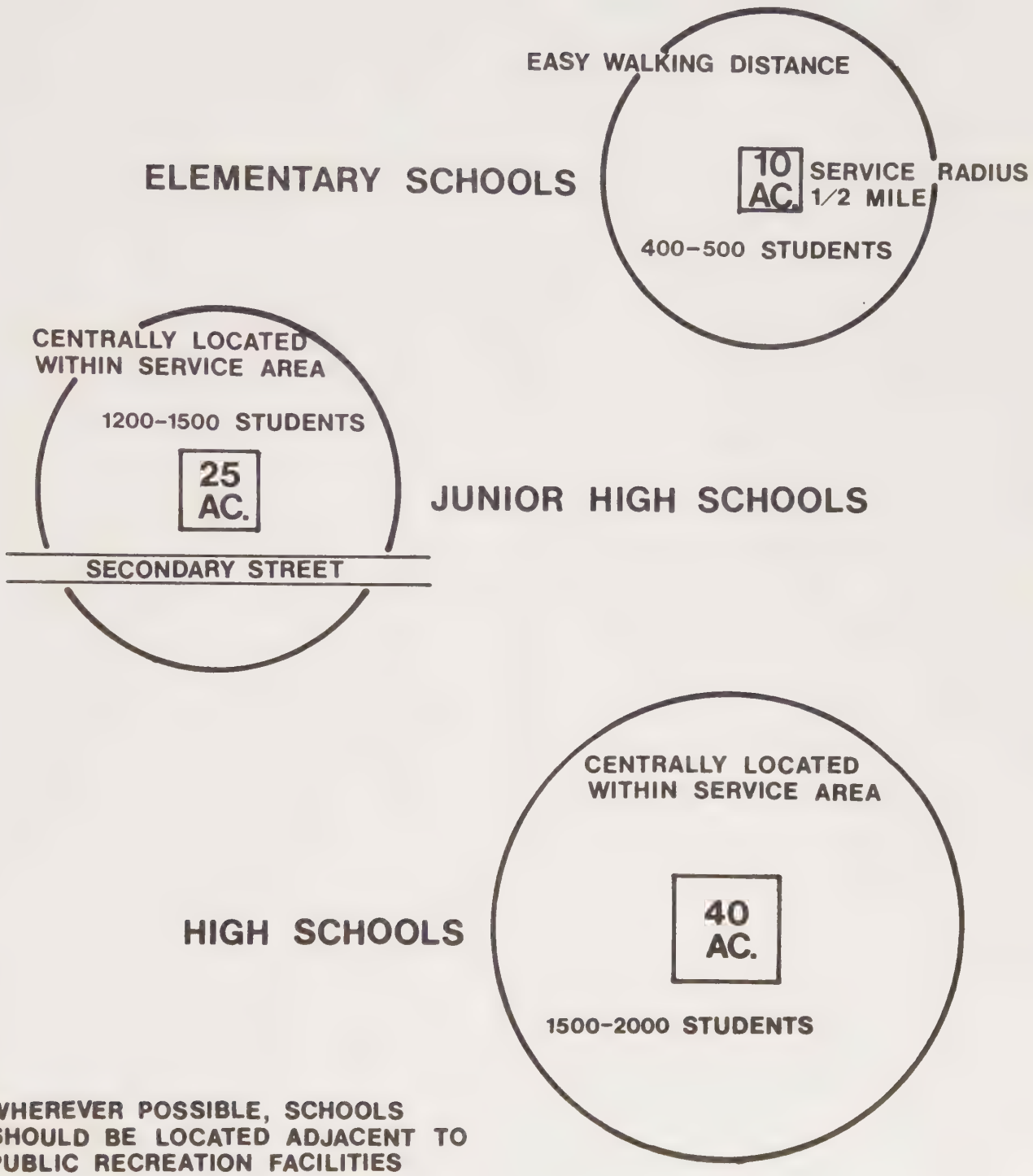
High Schools: High schools (9-12 grades) should be located on a 40-acre site as central as possible to the residential area it is to serve and should be able to accommodate between 1,500 and 2,500 students.

Existing Schools:

The Land Use Inventory indicates that there are 9 existing public school sites which occupy a total of about 136 acres. Of these, the El Centro School District operates 7 schools, grades K-6, and 2 junior high schools, grades 7-8. The school district has approximately 4,100 students. The high school district operates one campus, grades 9-12, on a 33 acre site, which serves approximately 2100 students.

FIGURE 31

EDUCATION FACILITIES STANDARDS



WHEREVER POSSIBLE, SCHOOLS SHOULD BE LOCATED ADJACENT TO PUBLIC RECREATION FACILITIES

Table 34
School Enrollments

School Facilities	Enrollment	Acres
El Centro Elementary School District		
De Anza School	385	9.6
Desert Garden	429	7.2
Harding	424	8.2
Margaret Hedrick	482	12.0
Lincoln	416	8.1
McKinley	563	19.6
Washington	430	9.9
Junior High Schools		
John F. Kennedy Junior High	446	17.2
Wilson Junior High	645	11.2
Elementary School District Total	4,220	103.0
High School District		
Central Union High School	2,276	32.9
Park Avenue Continuation High School	211	
High School Total	2,487	

Little population growth is expected to occur in the service areas of the existing schools. These areas are developed almost to capacity and contain little vacant residential land. Estimates of the increases of population within all these areas amount to only about 1400 people and the majority of these people will live in multiple dwelling units, probably not adding significantly to the school age population. Furthermore, overall family sizes and number of children per household enrolled in school have been declining steadily for a number of years. This implies that there will be no need for additional school facilities within the city.

Population growth outside the existing area may mean additional school facilities will have to be constructed in the future.

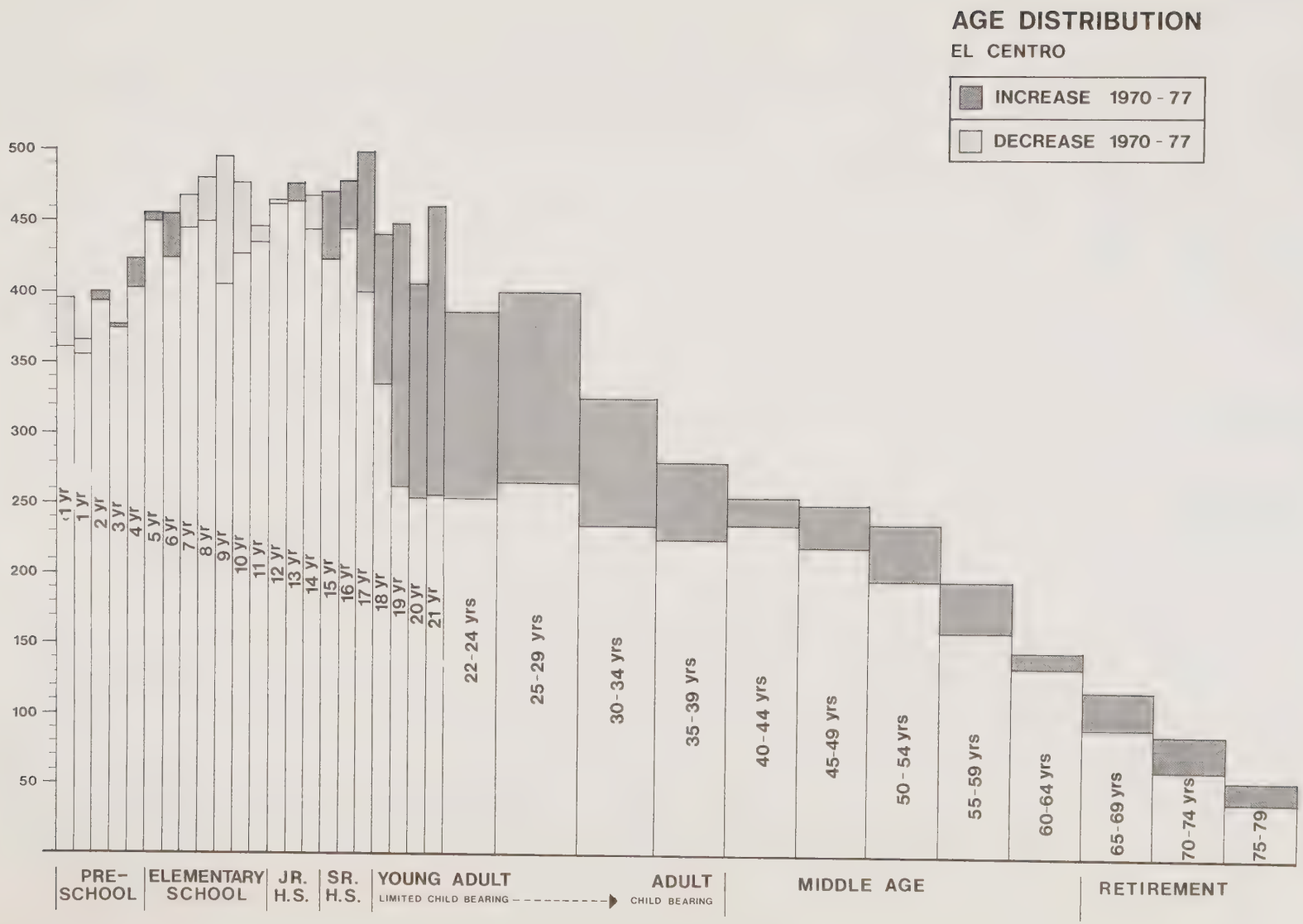
Future School Enrollments

Projecting school enrollments even five years into the future is an uncertain effort. Future school enrollments will be affected by current and future birth rates and the extent of migration (both in and out) of families with school aged children. Recently, birth rates for both Imperial County and California have stabilized after a twenty year period of steady decline. In the future, some demographers expect birthrates to stabilize at or slightly below current levels. However, others think that such rates are cyclical, rising and falling in response to changing social and economic conditions.

Total enrollment in the El Centro School District has declined by about 351 students since 1970, even though the city's population has increased dramatically in the last seven years. Figure 32 indicates that the bulk of the city's population growth has been due to an increase in people of 18 years or older. The number of school-aged children (ages 5 through 11) has declined by about 170.

The large increase in the number of people between 15 and 34 years old has several implications. For example, the large increase in the number of what has been called the "young adult" category (18-24 years) has probably had a substantial effect on the city's housing market, reflected by an increased role for apartments and trailers. As these

FIGURE 32


AGE DISTRIBUTION
EL CENTRO
INCREASE 1970 - 77
DECREASE 1970 - 77
500
450
400
350
300
250
200
150
100
50
<1 yr
1 yr
2 yr
3 yr
4 yr
5 yr
6 yr
7 yr
8 yr
9 yr
10 yr
11 yr
12 yr
13 yr
14 yr
15 yr
16 yr
17 yr
18 yr
19 yr
20 yr
21 yr
22-24 yrs
25-29 yrs
30-34 yrs
35-39 yrs
40-44 yrs
45-49 yrs
50-54 yrs
55-59 yrs
60-64 yrs
65-69 yrs
70-74 yrs
75-79
PRE-SCHOOL
ELEMENTARY SCHOOL
JR. H.S.
SR. H.S.
YOUNG ADULT
LIMITED CHILD BEARING
ADULT
CHILD BEARING
MIDDLE AGE
RETIREMENT

people leave home, they can not yet afford, and may not want, a house of their own. They usually live in apartments or trailers. This fact, helps explain the marked decrease in the average number of school students enrolled per household during the last few years.

Additionally, the large increase for this group and in other age categories (15-19, 25-29, and 30-34 years) may indicate strong future population growth due to "demographic momentum." Many demographers expect that the recent decline in birth rates is due to a postponement rather than a foregoing of having children.

The childbearing years may have shifted from the early and middle twenties to the middle and late thirties. If this turns out to be the case, a large portion of the current population will reach "delayed" childbearing age over the next ten years. (For example, the age group 20-29 years, who will be 30-39 years old in ten years, is currently about one third larger in number than the existing 30-39 age category). Furthermore, the large number of young people currently between the ages of 14 and 20 years will reach their middle and late twenties within a decade. In the interim, values and attitudes may change so that these people will begin having children, too. As a result, birth rates may increase strongly over the next decade with a strong impact on school enrollment.

The above discussion leaves out the possible effects of migration. Until recently, out-migration has served to reduce the number of young adults and probably to decrease the birthrate somewhat. On a county-wide basis, young people moved away and were replaced by older people,

keeping the county's population fairly constant. Recently, however, this out-migration has slackened, and in fact the ranks of younger people may have been increased because of migration into the county. Furthermore, the in-migration of people of childbearing age may be accelerated because of geothermal development or because of economic growth due to other cause such as changes in agricultural land ownership and production practices, or the development of a substantial local recreation and tourist industry.

All this suggests that long range projections of school enrollments are likely to be wide off the mark. The city and, indeed, the entire nation may be in a period of demographic transition with changes and impacts comparable in scale to those which occurred in the period following World War II.

Rather than basing estimates of future enrollments on strictly demographic projections in which values of important parameters are little more than guesses, the following are based upon the ultimate carrying capacity of the proposed plan and upon estimates of the number of school children likely for each type of housing unit. The following figures were used, based on experience in other urban areas and limited information specific to El Centro.

Table 35 : Average School Enrollment Per Housing Unit

Type of Unit	Elementary School Students per Household	Junior and Senior High School Students Per Household
Single Family	0.7	0.3
Multiple Units	0.2	0.1

Ultimate Population Growth

By the end of the century, the population of El Centro is expected to increase by between 10,000 and 30,000 people. About 2000 people will be housed in about 1000 apartment units to be constructed within the already developed area. The remaining new residents will be accommodated in single family units and mobile homes throughout the area of influence. Between 2400 and 7800 single family units will be constructed at varying densities around the city. These projections imply the following increases in school enrollments:

Table 36: Increases in School Enrollments Under Different Population Increases

Population Growth	Increase in Elementary School Enrollment	Increase in High School Enrollment
10,000	1800	820
30,000	6100	2680

New Schools

If population increases by 10,000 people, three new elementary schools, each with a capacity of about 600 students will be needed. If population growth is accelerated so that the ultimate population capacity of the proposed plan is reached, nine new schools may be needed. However, the land use plan indicates only seven new school sites, because of a trend toward somewhat bigger schools and the fact that the present elementary school system is approximately 500 students under its capacity. Additionally, because of somewhat lower densities proposed for residential development around the periphery of the area of

influence schools should be larger and more widely spaced than at present.

As an alternative to new schools, it may be feasible to expand some or all of the existing schools. Discussions with school officials indicated this approach was preferred because of both financial problems and a need to comply with mandated integration requirements. However, sites are indicated by this General Plan in case this approach is not used or if some additional sites are eventually needed.

High school enrollment is expected to increase by about 300 students if moderate growth occurs over the next two decades. The present high school is near its capacity of 2200, but it may be possible to expand sufficiently to accommodate an additional 800 students. This could be done by either acquiring adjoining residential land or the nearby junior high. However, the acquisition of the junior high by the Unified High School District is complicated by a State "lien" on the property because of a construction loan. It may be possible, however, to work out a "school trade" whereby the High School District builds a junior high and then trades it to the El Centro School District for the current junior high.

If much more rapid population growth occurs, an increase in enrollment of over 2400 students may demand a new high school. A new site should be located as near as possible to the center of the service area, on a major thoroughfare, and be at least fifty acres in size.

LIBRARY

In order to meet the requirements of the residents of El Centro, the following objective for library facilities is established:

> Insure adequate facilities located in accordance with library standards and equipped with books, reference materials, and educational devices to serve all the residents of El Centro.

To accomplish the objective of the Plan, the following should govern the location and acquisition of branch library sites:

> Branches should be easily accessible by automobile with adequate off-street parking, located on a major or secondary thoroughfare and near a major intersection.
>
> The location of branch libraries, wherever possible, should be located within or adjacent to shopping facilities.
>
> The main purpose of the branch library is to provide local library services to senior citizens and elementary school children.

Currently there is a central library in the city located on the south side of State Street between 5th and 6th Streets. This facility is just slightly under accepted standards for cities in the population range 10-25,000 people. An addition of about 2,100 square feet is being planned and the library should be adequate to serve the present needs of the city. At present, there is a lack of adequate parking but there is, however, publicly owned land nearby which could be used for library parking and further expansion when needed.

The original building is in need of rehabilitation. It was built in 1910 and represents an important example of early Imperial Valley architecture. Rehabilitation efforts should be sensitive to the library's place in the city's history.

Major increases in the city's population will mean the library facilities will have to be expanded. When the city's population exceeds 50,000 people, it may be wise to establish a branch library to serve portions of the city some distance away from the central area.*

A branch library should serve a minimum of 25,000 people within a radius of one and a half miles. Both pedestrian and auto access to the branch should be high. An excellent branch location is within or adjacent to a community or regional shopping center. The branch should be built where it can be clearly seen, with a street entrance, and with as little setback as possible. Parking lots equal in area to floor area, as well as space for bicycles and delivery trucks, should be provided close by.

---

* Currently there is a small but heavily used children's branch library located in the Community Center.

POLICE FACILITIES

The following objective for police facilities is established:

> Ensure the highest standards of performance by providing the police department with personnel, equipment and facilities that would assist them in protecting the health, safety, and the general welfare.

In order to achieve this objective, the following principle is established:

> The expansion of police facilities shall be taken into account in both planning and design for the entire El Centro area.

The current statewide standard for police manpower is 1.75-2.50 officers per one thousand people. The El Centro police force has 34 sworn officers serving a population of approximately 23,000 people. The manpower ratio is, therefore, about 1.50 or slightly below minimum standards.

Furthermore, police protection needs probably exceed those estimated on the basis of nominal manpower ratios and official population estimates because there is a sizable, seasonal migrant and visitor population, as well as a large influx of daily commuter workers along with an unknown number of undocumented workers.

The present police headquarters is located just north of City Hall. There appears to be limited potential for the expansion of this facility beyond the borders of the present site, though land is being cleared to the west. Sizable increases in police staff will be required over the next ten to twenty years in order to bring manpower up to standard and

to meet new needs due to population growth. (For example, if the city's population increases to 30,000 people, moderate growth over the next twenty years, the minimum manpower required will be 61 officers or almost twice the present number.)

The expansion potential of the existing police facility should be evaluated in detail and a strategy for eventual expansion should be developed.

FIRE STATIONS

In order to implement the public facilities needs, the following objective for fire prevention facilities is established:

> In order for the fire department to continue to protect the health, safety, and general welfare of the citizens of El Centro, it is recommended that the City support the highest standards of personal training, performance, and facilities.

In order to achieve adequate fire prevention, the following principles are established:

> Promote the continual efficiency of personnel and the upgrading of the fire fighting equipment facilities by expanding the budget to permit the acquisition of additional equipment and the training of employees.
>
> Establish and maintain the optimum fire insurance rating for the community.

General Plan Proposals

At the present time there are two fire stations. The first is located at Eighth Street and State Street, and the second is located in the one hundred block of East Main Street. Four additional fire stations are proposed; to be located around the periphery of the existing city. The location of these stations has been proposed by the Fire Chief and are generally compatible with plans for the city's expansion. However, the location of the new station on East Main should be re-examined to insure it will adequately serve the proposed large residential district east of the city. It may be appropriate to locate this station further east on Main to more closely correspond with the center of its service area. The currently designated location is relatively close to an existing station.

As with police protection, the current statewide standard for fire personnel is 1.75-2.50 fire fighters per one thousand people. The El Centro Fire Department currently has 35 sworn fire personnel constituting a ratio of about 1.6 per thousand, slightly below minimum state standards. Consequently, future population growth will necessitate additional fire personnel.

CIVIC CENTER

A variety of building types is necessary to satisfy the requirements of the many diverse governmental agencies within the city. The location of each should be determined by its function.

The General Plan indicates a grouping of government buildings, offices, and open space in an integrated Civic Area. It is recommended that precise plans be developed and adopted under the provisions set forth in Chapter 4, Article 2, Section 65850 (f) of the State Planning Act. Through the creation of this district, the community would, under state law, be able to more carefully regulate new structures proposed for the area and guide the major changes in land use that may be submitted in the future for any of the land within the boundaries indicated on the General Plan Map.

The Civic Area indicated on the General Plan contains many varied uses of land; however, all are in locations where they constitute an important feature of the city's basic structure. There is an intimate relationship between the public buildings in this area, the schools and the fine residential blocks. In defining the entire complex as the "Civic Area" it is proposed that this section of the city become a focal point where all of the structures and uses will be designed and maintained at the highest level possible.

The City is currently evaluating four proposals to create a "Civic Center Zone," in place of a current zoning overlay which will include specific uses and performance standards. The existing City Hall will probably require expansion to meet the requirements of the expanded

population. The City is currently investigating the potential for expansion to adjoining properties.

CULTURAL FACILITIES

The people of El Centro have always tried to provide for a rich social and cultural life. Currently, the city's population supports an archaeological museum, a community center, a variety of informal theatre and recreation groups, and a great number of community groups. However, space to house these activities has been in short supply and scattered throughout the city. (For example, meeting rooms at the Community Center are used to full capacity and often require booking far in advance.)

The City is investigating the possibility of a Cultural Center which would house many of the city's publically supported activities and also be available for private groups. Among the possibilities being considered for the facility are: a theatre/auditorium/performing arts center, an expanded archaeological/historical museum, a convention center, an expanded senior citizens' center, and multi-purpose meeting rooms. Various combinations of these uses are being evaluated and possible sites and funding sources are being investigated.

The location of such a facility is critical to its success. Such a facility should be served by a major thoroughfare and be as near the center of its service area as possible. (The service area is defined by a distance of approximately one hour of driving time.)

SEWER SYSTEM

In 1976, the City Council contracted with Design Sciences, a Division of Jacobs Engineering Company to prepare a master plan for the expansion and improvement of the City's sewer system. The ultimate area of service was designated to include those areas which the city anticipated would be annexed within 20 years. This urban service area would accommodate a population of about 35,000 people on three classes of land consisting of industrial, commercial, and residential.

Predicting the needs of El Centro's sewer system was accomplished by correlating population, land uses and the wastewater generated by each class of user. Population estimates were based on a uniform growth rate of 2 percent per year. According to the present sewer plan, most future development will occur in the west and in the south. However, no provisions had been made for substantial city expansion to the east. In order to properly balance future development, additional sewer facilities will be needed in the east. Studies will need to be conducted in order to formulate a sewer plan that will best service this area.

Existing Sewer System Problems

El Centro and many other cities in Imperial Valley generate more wastewater per capita than most comparable communities in the State. Peak flows are sometimes twice that would be expected. The high average unit flow, 151 gallons per capita per day, is attributed primarily to the infiltration of groundwater.

The slope of pipes in the system is minimal including some places where there is none. Records show there might even be places where the slope opposes flow. Such circumstances create sewer surcharging which causes lower velocities of flow which in turn promotes the settling of grit and other solids to the bottom of the pipe and reduces the effective capacity of the overall collection systems.

In order to ameliorate the existing sewer problems, several lines will be repaired. The City should pay special attention to the details of sewer construction in order to insure that those lines are as infiltration-proof as can reasonably be achieved. These improvements will reduce the flows on a per capita basis in coming years, thereby extending the capacity of the sewers and the sewage treatment plant.

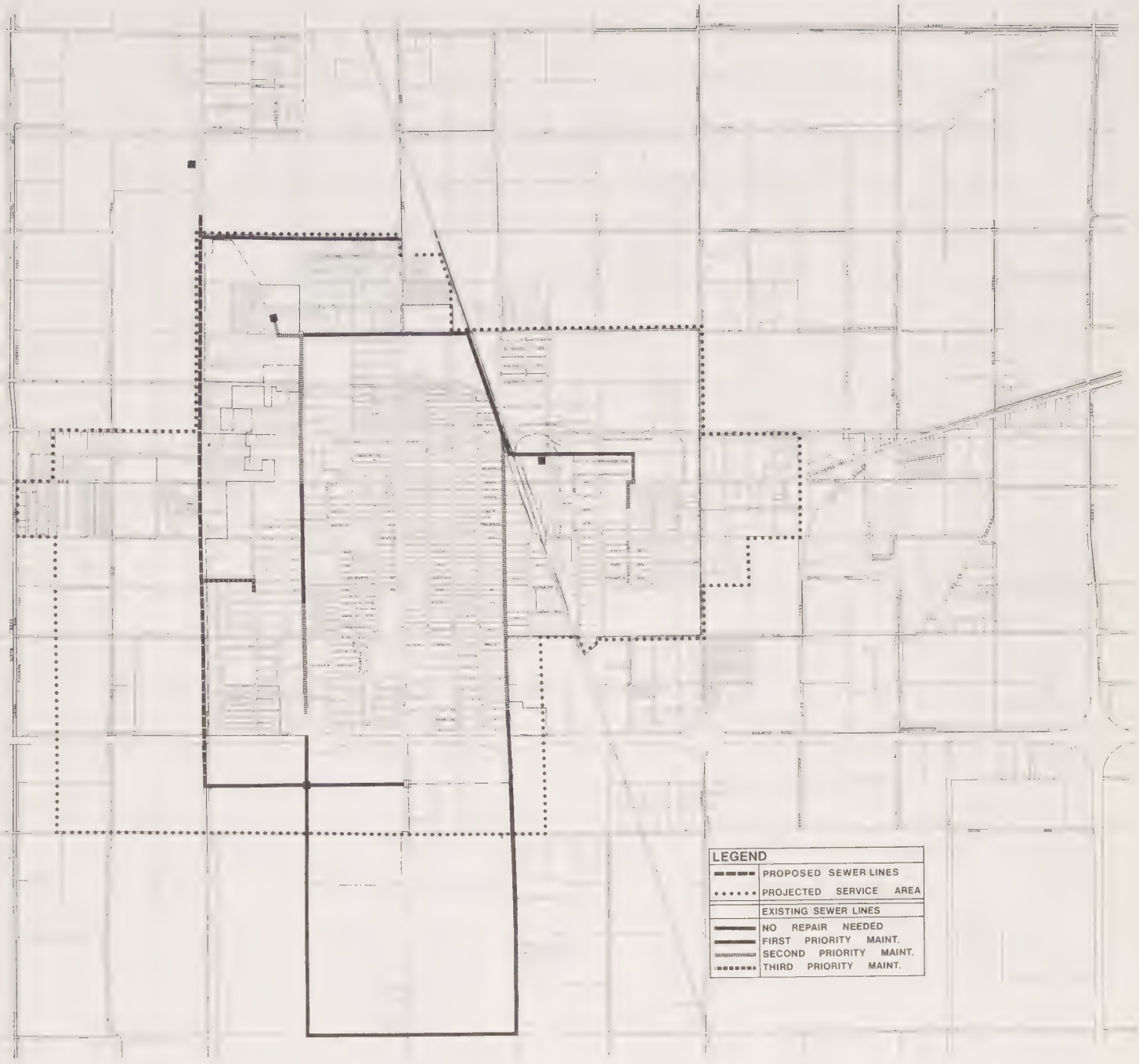
Future Improvements

As the city grows, so must its sewers. Sewer construction, however, cannot be staged as easily as water system expansions. If the area under development now is in a location remote from the treatment plant, the pipe line serving that area must be sized for that area plus all the areas in between. Because sewers rely primarily on gravity flow between the point of origin to the point of disposal, the pipeline cannot be built in segments but instead must be constructed completely end-to-end.

Figure 33 illustrates the new proposed sewer lines that will accommodate future growth within the area of influence. The service area, as it is currently drawn does not encompass all of the areas envisioned for growth. Therefore, future development outside of the existing service

area will occur only after sewer services are provided by either the City or a subdivision developer.

Most of the soils in and around the City of El Centro are Class III soils. Class III soils generally have slow to moderately slow permeabilities, high water tables and pose problems with septic tanks. Usually only central sewage systems are suitable for homes in areas with those types of soil conditions. A more detailed analysis may be found in Table 37.



SEWER SYSTEM

CITY OF EL CENTRO PLANNING AREA

EL CENTRO PLANNING COMMISSION

Table 37

Soils and Septic Tanks

	Crop Suitability (Irrigated)				Limiting Factors									Septic Tank Design Changes						
	General Field Crops	Vegetables	Cirus	Suitability for Water Reservoirs	Slow/Moderately Slow Permabilities	High Water Tables	High Salinity	Slow Runoff	High Clay Content	Sandy Texture	Severe Shrink-Swell	Low Bearing Strength	Problems with Septic Tanks	Central Sewage Systems for Homes	Tile Drainage & Tile Absorption Fields	Extra Length of Filter Field Lines	Sandy Backfill Trenches	Moderately Spaced Tile Drains	Possible Contamination of Ground Water	Excavate Filter Field Trenches to Depths Below Upper Soil Levels
Class I																				
Gi	0	0	0	0	0			0				0		0						
Class II																				
GA	0	0	0	0	0	0						0	0	0	0	0	0			
GV	0	0	0	0				0				0	0					0		
HM	0	0		0	0	0	0				0	0	0	0	0	0				
HV	0	0		0	0	0		0			0	0	0	0	0					0
Class III																				
IG	0				0	0	0		0		0	0	0	0	0	0	0			
IM	0				0	0	0	0	0		0	0	0	0	0	0	0			
ME	0	0		0	0	0	0	0				0	0	0	0	0	0			
Vi	0	0	0	0		0				0		0	0						0	

WATER SYSTEM

The City's present water supply comes from the Colorado River, delivered to the water treatment plant via the Date and Dahlia Canals. Municipal water requirements represent a small proportion of the overall water usage in Imperial Valley and projections by the Imperial Irrigation District indicate no supply problems over the next thirty years. The recent addition of a five million gallon water storage tank further insures an adequate water supply for the City of El Centro.

However, there are serious low water pressure problems in the northern and northwestern sections of the City. These problems are the result of cathodic action on old cast iron water lines. As a consequence, modifications to the water treatment plant will be needed, along with a systematic timetable for the replacement of faulty lines. In addition, the "looping" of water lines to maintain pressure and insure adequate delivery is recommended, as is a requirement of sufficiently sized pipes to accommodate the greater flows expected as a result of peripheral development.

SUMMARY

Assuming that efforts to upgrade the water system are successful, there are no obvious physical obstacles or problems to meeting existing and future public facilities needs. As part of implementing the General Plan, water and sewer distribution system improvements will have to be programmed and budgeted. This will necessitate ongoing analysis and monitoring of additional funding requirements and implementation measures for the extension of such services as fire and police protection as well as sewer and water improvements indicated in the Master Water and Sewer Plans. The next phase of expansion should occur to the east if the General Plan goal of balancing development is to be achieved.

However, it should be noted that one potential problem deserves further attention. If large-scale geothermal development occurs in the Valley, then a substantial transient labor force will be required to construct power plants and related facilities. There is a high probability that Heber will be among the first areas to be extensively developed, and since this area is closest to El Centro, development would likely have a direct impact on the city.

Local employment associated with the construction cycle of a "typical" 200 Mw geothermal plant is shown in Table 38.

Table 38: Construction Cycle Employment

	Year							
	1	2	3	4	5	6	7	Total
Employment (man yrs)	6	12	32	32	73	85	65	305

Source: Dry Lands Research Institute

Between 5 and 10 such plants are expected to be constructed in Heber. The impact on the city's economy and public facilities and services depends on the time table for development. For example, it is

possible to envision two divergent possibilities shown in Figure 34.

In both cases, the total number of plants constructed is the same, but in the "fast" cycle the plants are constructed over a period of seven years at an average rate of about three plants every two years. In the "slow" case, the construction cycle extends over fifteen years at an average rate of about one plant every three years.

In the "slow" case, the impact on El Centro's economy and public facilities and services would be relatively low. Changes in the labor force at the beginning and end of the construction of individual plants would be evened out, and total employment would rise and fall slowly, allowing sufficient time for necessary adjustments. In the "fast" case, employment would increase (and decrease) much more rapidly. For example, assume one plant, started in 1985, two in 1987, three in 1989, and one in 1991. The resulting direct employment cycle is shown in Table 39.

FIGURE 34

ALTERNATIVE GEOTHERMAL DEVELOPMENT CYCLE

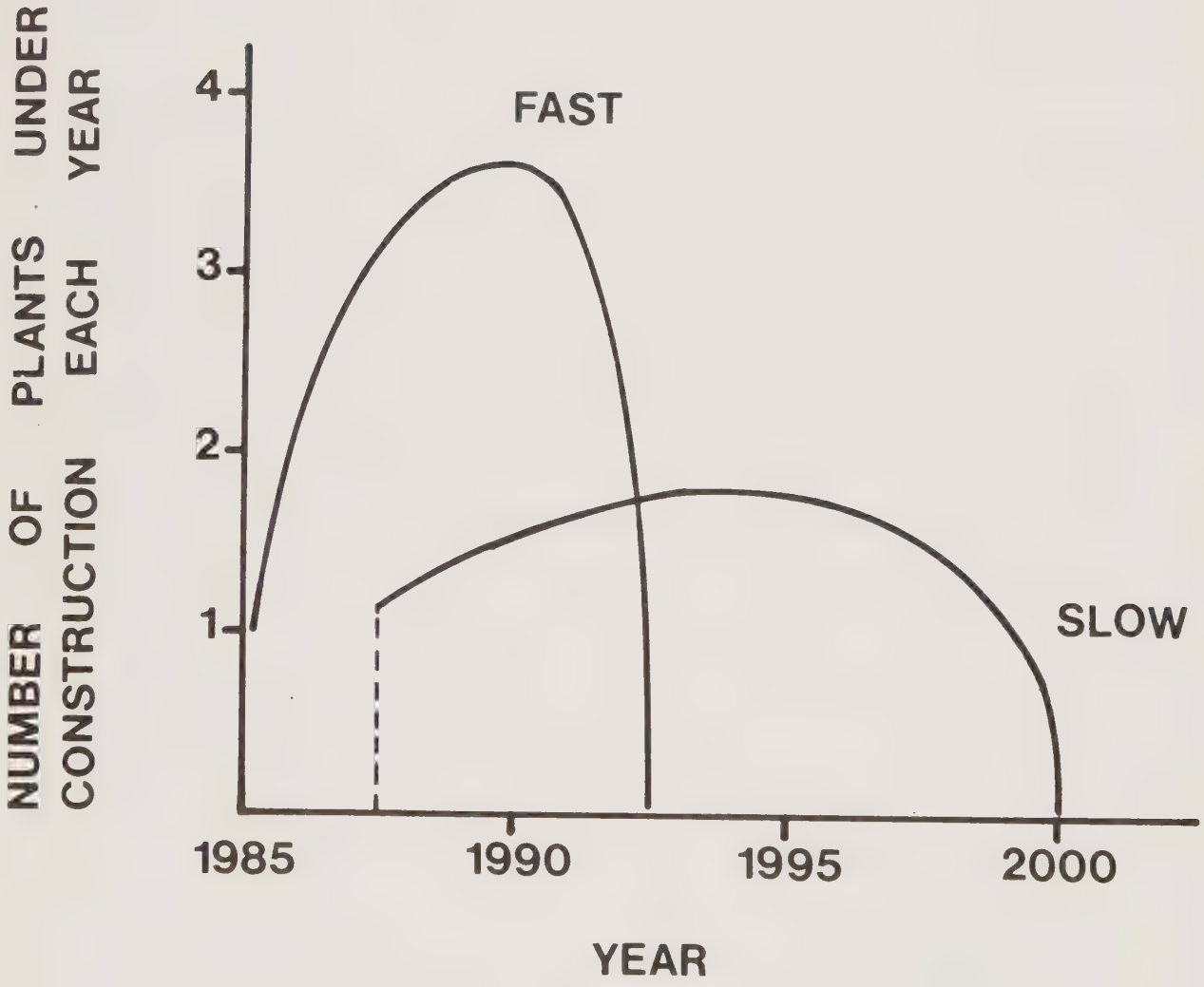


Table 39: Assumed Construction Time Table
Direct Employment Cycle

Year	Jobs
1985	6
1986	12
1987	44
1988	56
1989	155
1990	185
1991	307
1992	278
1993	381
1994	287
1995	268
1996	85
1997	65
1998	0

Source: Calculated from Table and assumptions in text.

Employment would increase to over 300 workers by 1991, hold fairly steady for a few years, and then decline by 200 workers in just two years. If a significant portion of the fluctuating labor force were to locate in El Centro, the city would experience a number of serious problems. For example, the public schools are now operating almost at capacity, so that additional numbers of school-age children would strain the educational resources of the city. In addition, new housing accommodations would be required, while the already taxed water system would be burdened further. Furthermore, local unemployment and other social problems could be worsened.

If public facilities were expanded to handle the increased demand, the existing residents will face tax increases. And if the work force is truly transient, the city may be faced with the dismal prospect of an overextended public services system with too few people to operate it economically.

It is suggested that the City closely monitor plans for the construction of geothermal facilities in Heber and other areas so as to be able to have an "early warning" of what it may have to deal with in the future.

CONSERVATION

The Conservation Element is defined by Section 65302d of the State Government Code, as a required element of all city and county general plans. The purpose of this element is to guide the wise management preparation and use of natural and other significant resources within and surrounding the City of El Centro. The overall objective of conservation is to prevent wasteful exploitation, destruction or neglect of these resources.

The City has established as a general goal, the protection and preservation of agricultural lands and other natural resources. This goal encompasses the conservation and protection of the city's environment which includes the physical and chemical characteristics of its water, air and soils, the biological conditions of its flora and fauna, and the social, cultural and economic resources identified with the community and its goals.

This element is divided into subsections which address the following resources of primary concern:

(1) Agriculture and Soils

(2) Geothermal Resources

(3) Water and Air Resources

(4) Community and Historic Values

(5) Energy Conservation

Understanding the interconnection of these resources through the activities of man is important to achieving effective conservation of these resources. The following are examples of the kinds of interconnections which can occur with future development:

(1) Future population growth may lead to development of farmlands which will in turn affect water-use patterns within the Imperial Valley.

(2) Geothermal production could cause adverse impact to agricultural lands from either subsidence or increased seismicity.

(3) Land use activities within the Colorado River watershed have increased the salinity of the water supplied to the Imperial Valley; this salinity affects irrigation practices in the Valley, and is increasing the salinity of the Salton Sea.

Comprehensive study of the potential effects of proposed development are necessary for maintaining the quality of the community's resources. The environmental review procedure required of all new development is the primary process for insuring that these effects upon community resources are considered.

AGRICULTURE AND SOILS CONSERVATION

The following objective is proposed for guiding conservation of agriculture and prime soils:

> Conserve and maintain the farmlands and prime soil areas surrounding El Centro, so that agriculture remains a viable and dominant part of the community's character and of the local economy.

Principles for carrying out this objective are proposed as follows:

--To maintain a viable infrastructure of agricultural services including:

  --irrigation channels

  --commercial fertilization and pest control

  --transportation of supplies, equipment and harvested crops

--To coordinate programs of action between the City, County and State, to insure the effective conservation of agricultural land uses within the region

--To conserve prime soil areas, which are best suited for agriculture, so that these may be utilized for food production

--To promote infill and cluster-type development so that unwarranted urbanization of outlying areas is curtailed

--To coordinate geothermal development policies with the County and State, to minimize the impacts upon local agriculture.

The Imperial Valley contains some of the most productive agricultural soils in the world. The economic base of El Centro and of the entire Valley has been, and continues to be, tied to that productivity. It is of primary importance that the viability of these agricultural resources be protected, even as industrial and other development becomes increasingly important to the local economy. In the interest of the general welfare of the public, and future generations, it is important that these rich farmlands be conserved.

Today much of the most productive farmlands lie on the fringe of developing areas, and so are subject to very strong economic pressures for development. As urban development encroaches, land values increase, leading to higher and higher tax assessments. Adjacent urbanization affects the quality of these farmlands, requiring greater costs for maintaining production.

The major thrust of the City's conservation efforts, therefore, will be to protect prime soil areas and those lands which have the greatest agricultural potential, while channeling growth in the direction of less productive lands, or toward the more efficient utilization of land already urbanized.

El Centro should coordinate its efforts for balanced and managed development with County programs aimed at the conservation of agricultural resources, so that the conflicts of urban and agricultural land uses are minimized.

Prior to the passage of Proposition 13 one major avenue whereby the County could effect agricultural conservation was through use-value tax assessment of farmlands, instead of market value assessment. Voluntary enrollment into state agricultural preserve contracts is one way in which farmers could insure use value taxation of their lands, and at the same time preserve the land in agricultrual use.* However, the passage of Proposition 13 now casts serious doubts on the financial incentives of entering into agricultural preserve contracts. Generally. the jurisdictional authority to effectively protect farmlands lies with the County. However, the way in which El Centro develops and expands will have a powerful impact upon the surrounding farm region.

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*California Government Codes - 51230 - 51239

FIGURE 35



SOIL CONDITIONS

CITY OF EL CENTRO PLANNING AREA

- MELOLAND & HOLTVILLE LOAMS, WET
- HOLTVILLE SILTY CLAY, WET
- VINT LOAMY FINE SAND, WET
- INDIO LOAM
- INDIO - VINT COMPLEX
- INDIO LOAM, WET
- MELOLAND VERY FINE SANDY LOAM, WET
- IMPERIAL SILTY CLAY, WET
- IMPERIAL—GLENBAR SILTY LOAM

Implementing land-conserving policies through the zoning and subdivision ordinances will help forestall premature expansion of the city into the agricultural areas. The city zoning ordinance provides for an agricultural district requiring a 20-acre minimum lot size, and restricting residential development to 1 acre of the total parcel. This district is designed to protect the integrity of agricultural activity within the city.

The development rating system, outlined in the Land Use Element, should be designed to address the impacts which a proposed project will have upon agricultural activities.

Effective implementation of a development rating system, should be combined with phased long-range programs for extension of public utilities. Together, these will provide an incentive for compact and contiguous development within El Centro, and thereby reduce the development pressure upon surrounding agricultural lands.

GEOTHERMAL RESOURCES

The objectives for the conservation of geothermal resources are as follows:

To develop these resources in a planned and efficiently managed manner, to discourage wasteful use, minimize adverse environmental impacts and prolong the economic production life of this resource

To encourage the direct utilization of geothermal resources to reduce the consumption of fossil fuels.

To accomplish these objectives the following principles are proposed:

To insure that the loss of productive agricultural lands due to geothermal development is minimized

To coordinate City interests and objectives with County and State regulatory agency plans, so that both the beneficial and adverse effects will be accounted for

To prevent geothermally-induced subsidence or seismicity

To insure that the public is well informed about the effects of resource extraction and use

To promote the varied and experimental application of direct geothermal energy to activities within the city area.

The potential for geothermal production in the Imperial Valley is very great; however, estimates vary widely as to where, when, how much and what type of production will take place. Most studies indicate that the effects upon the local area and economy will be significant from even moderate development of these resources.

The Heber Known Geothermal Resource Area (KGRA), centered about 4½ miles south of the city, will most directly affect the future development of El Centro.

El Centro intends to maximize direct use of geothermal resources within the city because of the following reasons:

(1) Direct use will enable the locality to have greater control over development and use of the resource;

(2) Direct use will reduce the city's consumption of fossil fuels, such as oil and natural gas, for energy;

(3) Direct use could be locally advantageous in terms of the number of related jobs generated, and the gross income accruing to the City.

Direct use of the hot geothermal brines for energy needs within El Centro is possible due to the city's close proximity to the Heber Resource Area. Currently, studies are being conducted on the feasibility of nonelectric uses within the city. One project being considered is the drilling of a geothermal well within the city, to heat and cool the Community Center. Medium range projects under study include:

(1) A housing demonstration project heated and cooled by geothermal energy;

(2) Development of a geothermal industrial park where participating industries would utilize geothermal energy for agricultural and manufacturing processes.

A study of current energy useage within the city concludes that geothermal heat energy could potentially be used for air conditioning, refrigeration, space and water heating. Approximately 70% of the total energy consumed in the residential and commercial sectors eventually could be replaced with the direct utilization of geothermal energy.

In summary, potential beneficial effects of geothermal energy development for El Centro include:

--The generation of new jobs for city residents;

--Indirect revenues from sales and support services (retail, food, medical, etc.);

--More visitor trips to the area;

--Direct use of geothermal heat;

--Additional economic and industrial development.

Geothermal development will obviously be an important factor in the economic growth of El Centro. However, most of the possible beneficial effects are based upon a managed, long-term production life of the resource. Therefore the institution of strict conservation measures to guide use of the geothermal anomalies is essential.

On the other hand geothermal production carries the potential of generating greater costs than benefits for El Centro, particularly during initial development of the resource. That is, the possible adverse effects of air pollution, water requirements, employee importation, subsidence and/or seismicity, could cost the city and its residents more than the value of the potential benefits. Operation of small demonstration plants should help to identify the specific effects of full-scale production.

The possible adverse effects to El Centro include:

--An increase in City fees to provide services to new residents;

--Ground subsidence, interrupting irrigation systems;

--Increased air pollution from cooling processes and/or electricity generation;

--Conflicts over the source of water used for electrical generation and ground reinjection;

--Pipeline or well blowouts or leaks;

--Aesthetic considerations;

--Biological impacts;

--Conversion of agricultural lands to geothermal plant sites.

Therefore, not only is close management of this resource important for enhancing beneficial effects, it is also important for identifying and minimizing any adverse impacts of development activity.

Institution of any management program should involve all levels of government in a cooperative effort. For example, the U.S. Soil Conservation Service, in cooperation with the Imperial Irrigation District may be the best equipped agency to monitor subsidence or seismic effects in the area. A program should be set up between the different government levels and agencies to take advantage of existing monitoring systems, and to instill effective communication between agencies regarding geothermal development policies.

The authority for regulating all geothermal exploration and production outside the City boundaries lies with Imperial County and the State. The City will be responsible for regulating any geothermal activity within the City and insuring that local goals and concerns are taken into account in the formation of geothermal production policies. It is recommended that the City generally support the following policies of the Imperial County Geothermal Element including:

*Geothermal plants shall be sited so as to have minimal impact upon agriculture.

*Slant drilling techniques shall be utilized in the irrigated areas of Imperial County where appropriate.

*The County shall seek the resources to prepare and publish anomaly-wide Environmental Impact Reports for each economic anomaly, to be used as a guide for development of each resource area.

*The County shall encourage the development of the direct use of geothermal energy.

*The County shall initiate study to determine the location of services required by the increased population, and any other effects engendered by geothermal development.

The following recommendations are further proposed, for local implementation:

--Support the development of a skills center for training local residents specific geothermal related skills required in local resource production

--Encourage local business and industry to consider how direct geothermal energy could be applied to their energy needs

--Continue to search out funding sources for experimental and demonstration projects adapting geothermal direct energy to industrial processing and to space heating and cooling

--Encourage those factories and businesses which utilize geothermal energy to maintain an "open shop," allowing visitors to tour the facilities, in order to gain an understanding of the resource and its use.

WATER AND AIR CONSERVATION

The following objectives are proposed for the conservation of water and air resources:

--To maintain and improve the quality of water utilized by the City and the surrounding agricultural areas

--To protect and maintain the good air quality of the Imperial Valley region.

The principles supporting these objectives are proposed as follows:

To support outside efforts to continually improve the quality of the Colorado River waters, through better management of waste discharges within the River's watershed

To insure that the quality of waste water flowing from El Centro's treatment facility fulfills the minimum secondary treatment standards

To conserve a limited essential water resource (the Colorado River) which must provide for many communities and land uses throughout the Southwest United States.

To support the policies and regulations of the State Air Resources Board for the Southeast Desert Air Basin, of which El Centro is a part.

El Centro's water supply comes from the Colorado River via the canals and facilities of the Imperial Irrigation District. Some 6,800 acre feet of water were delivered to El Centro in 1976. Approximately 3,000,000 acre feet of water per year are diverted to the 500,000 acres of farmland within the Imperial Valley. Agricultural drainage and treated municipal waste-water flow to the Salton Sea along drainage channels and the New and Alamo Rivers.

Colorado River water is of fairly good quality, however the amount of total dissolved solids (primarily salt) is very high. The City has little jurisdiction over the quality of the water supplied to it, since

the quality is primarily determined by land uses along the Colorado River outside the State of California.

Water for residential and commercial use is treated to remove dissolved solids, at the City's water purification plant which has a 12 million gallon-per-day (gpd) capacity. The City also operates a water treatment facility, located just north of the City on La Brucherie Road. This facility constructed in 1972, provides activated sludge secondary treatment, and has a capacity of 5,000,000 gallons per day. This plant will serve a population of about 35,000. At the present population growth rate, the plant will be adequate until around 1986.

The long term supply of water to El Centro is apparently well protected by various laws and agreements over rights to the Colorado River. The Imperial Valley has the third highest priority for diverted waters. Historically, California has had priority access to the river because of its early population growth. The total California diversion is presently about 4.4 million acre feet per year. The legislation of the Central Arizona Project protects these historic rights. A compact within the Law of the River requires that 1½ million acre feet/year of water be delivered across the border to Mexico.

Although California has this guaranteed priority use of the Colorado River water, there will not be enough water to serve the needs of the projected population growth and development within California and the other adjoining states.

Action should be taken now to reduce the amount of water used within the El Centro area, as well as throughout the Imperial Valley region.

There is another critical reason for conserving water. The volume of water carried to the Salton Sea is now causing the surface level to rise. If agricultural practices continue as at present, this rise will increase, resulting in flooding of recreational development and agriculture located along the shoreline of the Salton Sea.

Agricultural irrigation uses more water than necessary for crop growth alone. The extra water is utilized for frequent leaching of the soils which is necessary to prevent salt buildup. The more salt present in irrigation waters, the more water needed to leach the soils. The increased salt levels present in local agricultural drainage, is contributing directly to the increasing salinity of the Salton Sea. The present salt level is now threatening the survival of some sport fish species, and thereby affecting the recreational use of the Sea.

Research has indicated that a 35% increase in the efficiency of water use must be realized in order to allow for maximum agricultural development. Yet, in the development of geothermal resources, large quantities of water will be required for cooling processes and possibly reinjection. Because of the priority given to agricultural use of the Colorado River supply, other sources of water must be tapped for geothermal production. Over 1 million acre feet of waste water per year, plus water from the Salton Sea, are available sources which could possibly be utilized for geothermal production. The County, the State and the Imperial Irrigation District will be responsible for establishing the policies and regulations for geothermal water use.

Agricultural methods which are less water consumptive are to be encouraged. Water conserving processes for geothermal electricity

production should be required. Finally, better control of wastewater discharges throughout the Colorado River basin would help to reduce the salt and dissolved solids content of the water. Effective implementation of these principles will help to reduce overall water useage, decrease the wastewater flow to the Salton Sea; and decrease the salt content of that wastewater.

While it appears that the long term water supply is protected by law, and that water resources are presently abundant, the future climatic and population factors affecting water use are unpredictable.

Efforts should be taken by the community, as a matter of principle and of wise use, to prevent water wastage. Experience within many communities has proven that incredible savings of water can be achieved by modifying household water use patterns and individual habits. Reduced water use in the City would lessen the volume load upon the sewage channels and treatment facilities and decrease the amount of wastewater flowing into the Salton Sea.

The responsibility for water conservation falls on each citizen, landowner, and employee within the community. While personal, economic or health incentives toward this end are not particularly strong, the principle of conserving a limited resource which is drawn on by many users, should be reason enough to promote water conserving efforts.

AIR

El Centro lies within the Southeast Desert Air Basin (SEDAB), as defined by the California Air Resources Board. The air quality of the basin is generally good. The major pollution problem is dust particulate matter. In the period from October 1974 to September 1975, the maximum daily concentrations of total suspended particulates (T.S.P.) exceeded both the California and the Federal standards (100 and 260 ug/m^3 respectively), on at least one day out of every month.

Particulate matter is generated by wind blow dry soils, particularly during the late fall, and during the dust storms of winter and early spring. Agricultural burning and cultivation practices contribute most of the airborne dust.

Air pollutants from vehicles are found in very low concentrations within the Southeast Desert Air Basin. Because the population and average density of development are very low, there is little motor activity. Ozone levels are exceeded only two or three times per year. SO_2 concentrations are far below the maximum allowable standard.

The SEDAB is subject to frequent stable air conditions, when vertical air mixing is minimal. This situation intensifies the effects of ambient air because dispersal rates are very slow. Some agricultural practices which generate a great deal of dust are regulated and should be curtailed as much as possible. These include:

(1) Leaving cultivated fields vacant and open to blowing winds;

(2) Burning of crop residues to clear fields for new cultivation;

(3) Crop dusting for fertilization and pest control.

Future geothermal production may generate a significant amount of air pollutants. The non-condensible gases which could be emitted from cooling towers would be primarily carbon dioxide, but could include hydrogen sulfide, nitrogen, ammonia, methane and hydrogen. Air pollution would also occur during venting of reactivated wells and the testing periods of newly drilled wells.

Dust generation during drilling and construction phases is also common. Hydrogen sulfide is most injurious when oxidized in the atmosphere to produce sulfur dioxide and sulfur trioxide. Dissolved in precipitation these products are highly corrosive to living tissue and to exposed metals and common surface coatings such as paints and plastics.

The Air Pollution Control District has a number of regulations in effect which are relevant to geothermal development including, forbidding any discharge which causes injury or annoyance.

It is recommended that the City of El Centro support the regulations and policies of the State Air Resources Board and of the local Air Pollution Control District, to help maintain and improve the quality of the regional air basin.

CONSERVATION OF COMMUNITY AND HISTORIC VALUES

The objective for conservation of community and historic values is proposed as follows:

To maintain those community values and local historic places which provide a sense of continuity, and bring unique character to El Centro.

The following principles shall apply:

To retain local, traditional land uses within and around the city

To preserve places of unique historic value

To protect and enhance the downtown area, as the city's center of activity and community life.

El Centro has grown out of the agricultural development of the Imperial Valley. Agricultural processing and packing have dominated the City's industrial sector. The commercial sector has also been based on servicing and supplying the agricultural region.

A principle objective of this plan is to retain and preserve unique places which typify the traditions and historic character of the community. In keeping with this overall goal the following recommendations are proposed:

(1) Adopt and implement the recommendations of the Downtown Business District Study as one method of maintaining and enhancing the downtown area. The objective of the plan is to retain the character of the central area, with its arcades and storefronts, and to create a more lively and vibrant city center.

(2) Identify and recognize structures or places within El Centro which are of local historic or community importance. Take action to preserve such sites. Important community buildings to be considered in this category include:

The post office

The library

The County Court House

The arcades throughout the downtown sector

There are a number of procedures for protecting buildings and places of significance, and to foster local awareness of the community heritage:

(1) Begin a program of recognition, for example the placement of placques or markers to highlight the significance of a building or place

(2) Investigate the eligibility of local buildings for listing in the national, state, or local register of historic places

(3) Enact a preservation ordinance protecting local landmarks and/or an historic district. Such an ordinance usually prescribes review procedures for and restrictions upon proposals to alter or demolish designated structures

(4) Purchase development rights to an important building or property, to protect it from alteration or destruction

(5) Purchase and re-sell an important building or property with a covenant and reverter clause in the deed, restricting changes in the structure of the place.

Protection strategies such as these have been adopted in a number of communities and have been successful in helping to preserve historic buildings, structures and sites.

ENERGY CONSERVATION

The objective for energy conservation within the City is proposed as follows:

To utilize all energy resources in an efficient, conserving manner; to take advantage of natural climatic factors to reduce the energy used for heating and cooling; and to reduce the consumption of valuable fossil resources, such as oil and natural gas, which are limited in supply.

The following principles are proposed for meeting this objective:

To encourage the use of passive solar design concepts as a way to reduce energy consumed for summer space cooling and for winter heating

To provide incentives for subdivision plans which incorporate energy conserving design subject to the development of a specific plan

To promote the retrofitting of older buildings with energy-conserving climate controls such as shading devices, landscaping and insulation

To insure that the public is informed of ways to conserve energy in household activities

To promote the conservation of energy fuels in industrial manufacturing and processing; to encourage the recycling of waste heat, and the application of direct geothermal energy

To conduct periodic energy audits of all public buildings and programs, in order to improve the energy efficiency of local government operations.

El Centro is located within a hot arid climatic region, the Imperial Valley. Summers are very hot with a period of high humidity through August and September. The maximum high day temperature recorded is 119°F. The average high temperature from April to October is 98°; the average low is 66°. Winters are cool and dry. The lowest minimum temperature recorded is 16°F. Some home heating may be necessary during the period from late October to mid-April. Frosts occur only occasionally. The average high temperature from November to April is about 74°; the average low is 43°.

Precipitation is very low here. The yearly average rainfall is 2.73 inches.

The amount of energy in the form of sunshine, falling on each square foot of the El Centro area averages higher than almost any other place in the nation. Very few clouds ever appear to block sunlight penetration, even during the winter months of December and January.

The climate, combined with conventional building techniques, creates the conditions for very high consumption of energy to cool homes and offices. Energy required for space heating is estimated at 1/3 of that used for air conditioning. Energy-use for water heating is second to air conditioning as a major end use of energy within the City.

At present, there are many concepts of passive solar design which can be utilized in reducing these energy uses, with little or no additional costs to the developer or the homeowner. The additional costs required for other passive features, such as shades or thermal glazing of windows, will be offset by the savings in costs for space cooling. Since indoor heat gain will be reduced, the size of the air conditioning system required will be much smaller and, therefore, less expensive.

In the future, active solar heating and cooling systems may become more competitive with conventional systems. Therefore, the retrofitting of existing buildings with these systems should be facilitated now by protecting solar access and future orientation of solar collectors. Currently, the use of solar collectors for home and swimming pool water heating is quite economical, particularly when life cycle costs of the alternative heating systems are calculated.

Life cycle cost refers to the estimated cost of purchasing and operating any mechanical system through its entire service life. Operating costs include both fuel and servicing costs. While the solar water heating alternative is more expensive to purchase, the life cycle cost is less than that of the conventional heating system which uses gas or electricity.

Application of passive solar design concepts to new development and remodeling of old buildings would reduce energy use for air conditioning in the summer, and also that used for winter heating. Implementation of energy conservation practices throughout the city in conjunction with putting solar design concepts to use, could significantly lower the average energy consumption per building for heating and cooling.

Energy conservation is an important consideration for future development and expansion of the city and its infrastructure. It is expected that the cost and availability of energy resources will change significantly nationwide, throughout the next couple of decades. Environmental and economic conditions and constraints are making conservation of energy resources an increasingly important focus of the national and local energy outlook.

There are many factors contributing to this new emphasis on energy conservation, including:

The rising costs for fossil fuels such as oil and natural gas;

Public pressure to avoid nuclear plant generation, or stripmining of coal;

The decreasing costs of renewable fuel resources such as wind and solar;

The promotion of national energy independence;

More readily available financing of development projects which incorporate effective conservation features and alternative fuel resources.

Energy conserving measures can be incorporated into the physical layout and design of new development, retrofitting of existing development and more efficient operation of governmental projects and activities.

NEW RESIDENTIAL DEVELOPMENT

This section provides a brief description of some of the basic solar concepts which can be incorporated into building and subdivision design.

Building Design

The energy required for heating and cooling a building depends upon the quantity of heat lost or gained within the structure. This can vary significantly with climate, building design, and the habits of household members. Heating and cooling requirements are influenced by:

prevailing wind conditions

the amount of air infiltration

resistance to thermal loss or gain by conduction* through the windows, walls, ceilings and floors

the outside air temperature

the number of heating or cooling degree days* to which the building is exposed

the care used in operating the house to avoid heat loss or gain.

Properly designed structures will minimize heat gain in the summer months, while taking advantage of the sun's radiation to warm the building during the winter.

It is possible to reduce the high energy use for air cooling through building design which incorporates El Centro's climatic characteristics: very hot days, warm nights and cloudless skies in the summer; cool mild weather and very low precipitation during the winter.

Indoor temperature is directly related to the amount of sunlight hitting a building and the surrounding area of land. Of any climatic variable, the sun is the most important element to consider in building design.

*See the Appendix to this section for a glossary of terms

In El Centro, every aspect of a new building should be designed to maximize winter sun for heating, and minimize the amount of summer sun to reduce air cooling. Some of the major aspects include:

Shape: The shape of a building is a basic factor in design for energy conservation. Generally, in a climate such as El Centro's, the most ideal building shape is rectangular, with much smaller window and wall facades oriented toward the summer's intense afternoon sun (Figure 36) In the summer, the longer, larger window and wall facades are only exposed to the morning sun.

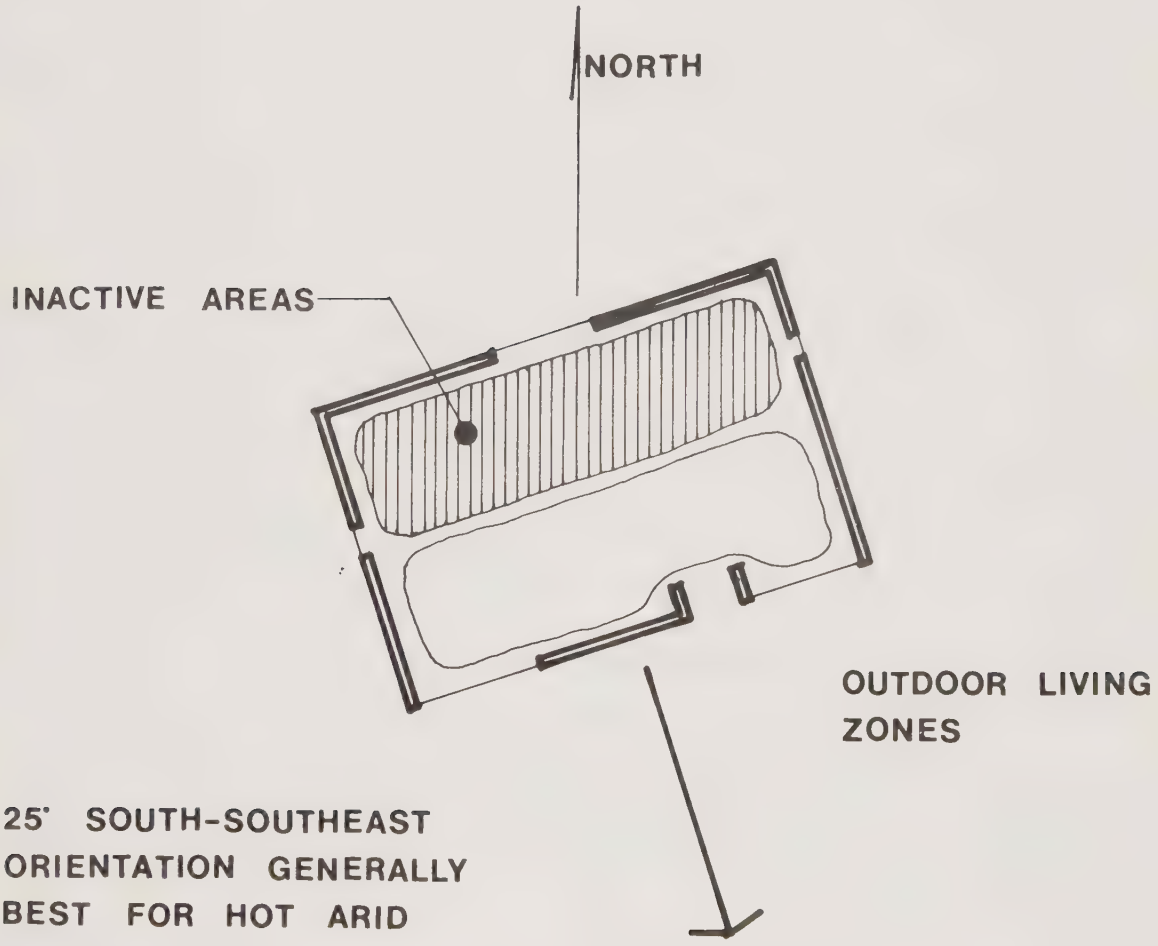
In the winter the larger window-wall surfaces will receive the low-angled sun rays for long periods of the day to warm the building's interior.

Orientation: Orientation is the positioning of a building on site. In El Centro, the most advantageous orientation of a building is toward the southeast (specifically 25^{o}east of south), so that exposure of the larger window and wall areas to midday sun is reduced. Southeast facing windows will receive morning sun in summer, but by afternoon will be shaded by the building's roofline (Figure 36). Windows and wall areas facing to the southwest, being smaller in surface area, will gain less of the intense afternoon heat.

Windows and Sun Control: Windows are the most significant source of heat gain or loss since clear glass, used in most homes is transparent to the sun's heat, thus allowing it to be radiated directly into the building. This heat is desireable in the winter months, but it can substantially increase cooling requirements in the summer.

FIGURE 36

IDEAL BUILDING ORIENTATION FOR HOT ARID REGION



There are three ways of reducing heat gain through windows: (1) reduce window size; (2) use glass of a higher thermal resistance; (3) provide shading for windows.

Of the three, shading is the most flexible method of sun control because devices such as awnings and roll shades are removable when sun is desired. Outdoor shading is generally more efficient than indoor shading in reducing heat gain. However, black-out curtains and venetian blinds which are placed inside can have a very significant effect.

Permanent architectural shading provided by overhangs or fins, if designed properly, will allow winter sun to penetrate inside, but will block the intense summer sun (Figure 37 and 38).

Landscaping: The use of landscaping can be an equally effective method of shading to maintain inside temperatures. Large trees not only shade windows, but much of the building as well, reducing the heat gain from conduction through the roof and walls.

Deciduous trees are best because they are in full leaf during the summer months when shading is most needed, but then lose their leaves and are bare during the winter months allowing the winter sun to warm the building. In addition, the placement of shrubbery around the base of a building will reduce direct exposure and indoor heat gain from the sun.

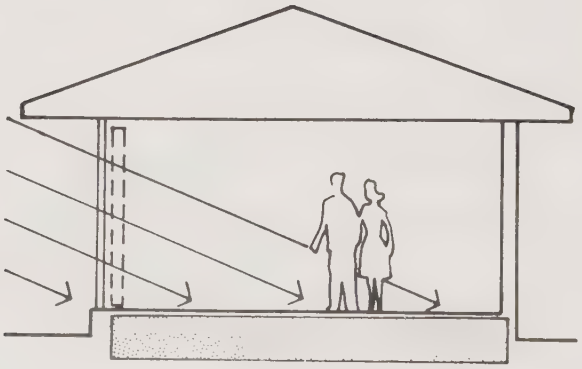
It is important to consider whether landscaping will in fact utilize more energy in being maintained than it saves by providing shade. El Centro's natural environment is very dry and hot; however, the provisions for importing water to this region, primarily for agriculture, has resulted in an abundant supply. These waters reach El Centro by gravity flow from the Colorado

FIGURE 37

DESIGN FOR WINTER HEAT GAIN

OVERHANG PROTECTS WINDOW FROM SUMMER SUN

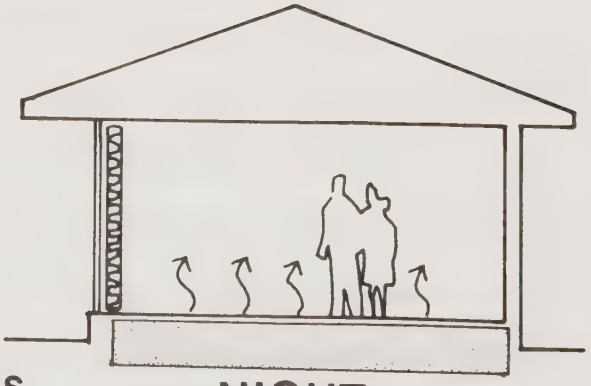
MASSIVE FLOOR TO PREVENT OVERHEATING



DAY

MOVEABLE INSULATION PLACED OVER WINDOW REDUCES HEAT LOSS

HEAT STORAGE IN MASSIVE FLOOR RE-RADIATES AT NIGHT



NIGHT

FIGURE 38

DESIGN FOR REDUCING SUMMER HEAT GAIN

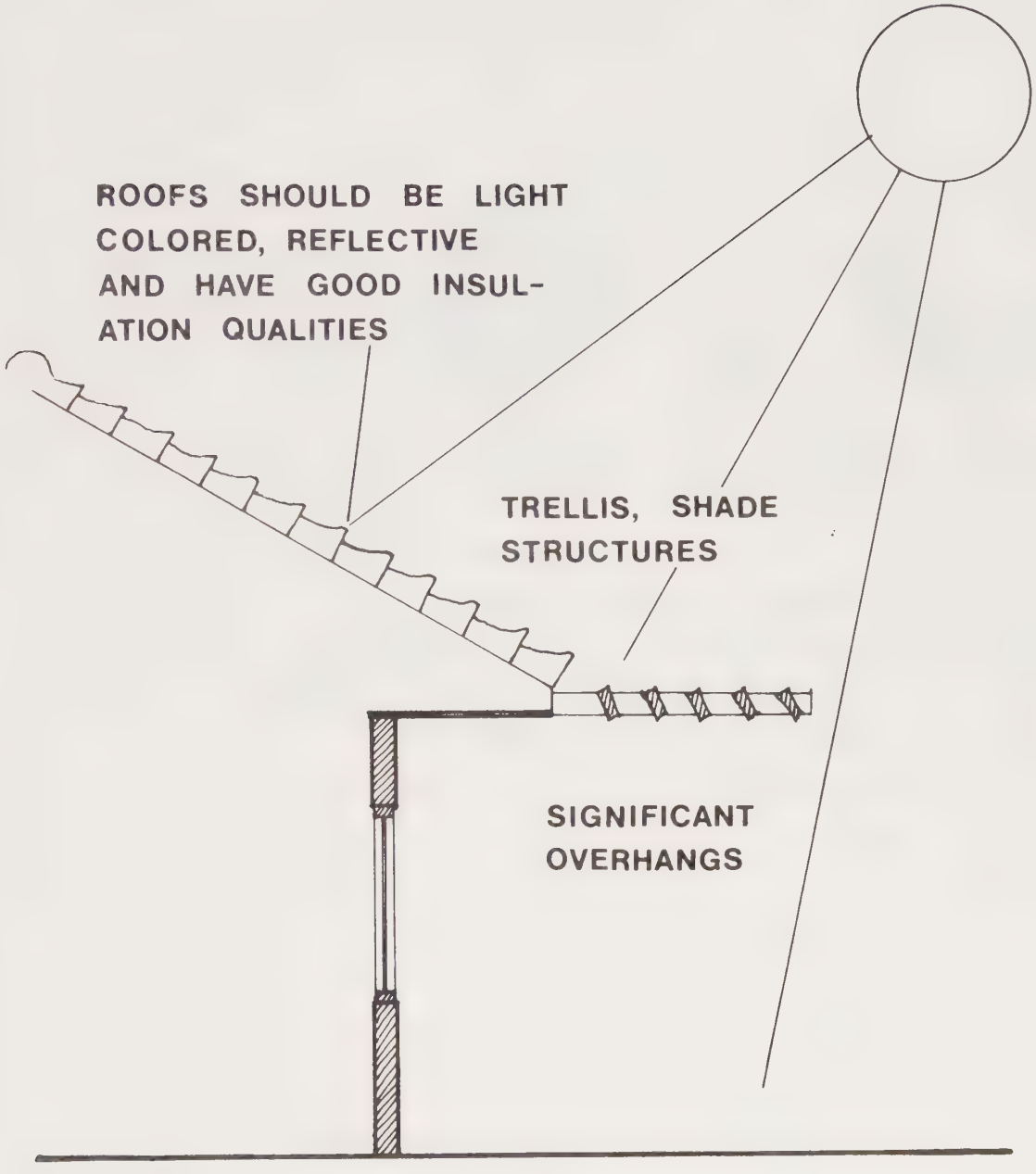
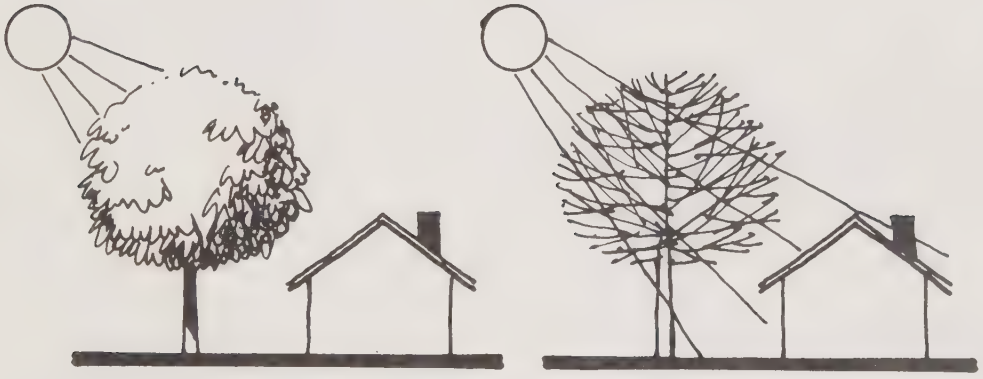


FIGURE 39

LANDSCAPING FOR SUMMER SHADE AND WINTER SUN



DECIDUOUS TREES CAN BE USED FOR SUMMER SUN SHADING OF THE DWELLING AND YET ALLOW WINTER SUN PENETRATION THROUGH THEIR BARE BRANCHES FOR SOLAR COLLECTION.

River. Therefore, little energy is used in transporting water to the area, and an inexpensive supply presently exists. Major landscaping of buildings thus appears to be a worthy energy conservation strategy.

Color: The exterior color of a building can also affect indoor heat gain. In general, light colored walls and a roof will be more thermally efficient; the lighter the color the more sunlight reflected off the building, and the more energy saved because of a cooler interior.

Subdivision Design

Solar site planning incorporates modified yard requirements, lot configurations and street design to take advantage of summer and winter sun orientations. The following discussion outlines some of the concepts which could be incorporated in subdivision planning for energy conservation.

Street Design and Lot Orientation: Streets which are predominantly laid out east to west will allow more lots to be oriented north to south, thus providing for the best solar exposure of both the lot and the building (Figure 40).

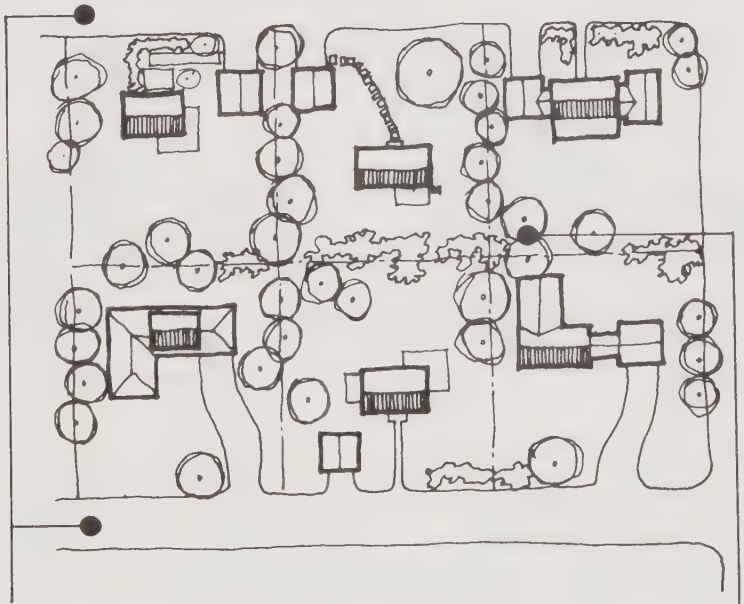
Reduction of street widths would save in both development costs and eventual energy use. Narrower streets have the effect of reducing microclimate temperatures. Even a minor reduction of less than 10°F. can significantly reduce thermal loads upon adjacent buildings thus saving energy used for cooling. Also street width reduction can make complete shading of streets by trees easier which can further reduce local temperatures, particularly when the shading extends over adjacent structures.

Pavement temperature affects energy use in other ways. Intense heat at the pavement surface discourages use by pedestrian and cyclists and encourages automobile use. Streets also increase night temperatures

FIGURE 40

SITE PLANNING CONCEPTS FOR HOT-ARID REGIONS

SITE PLAN FOR HOT-ARID REGION ILLUSTRATING PRINCIPLES OF ORIENTATION AND PLACEMENT OF BUILDINGS, STREETS AND PLANTING.



LOCAL STREETS RUN EAST-WEST.

TREES ON THE PROPERTY LINE PROVIDE BOTH MORNING & AFTERNOON SHADE.

- BUILDINGS ORIENTED FOR MAXIMUM SOLAR COLLECTION DURING WINTER.

- VARIATION IN SETBACK ALLOWS MAXIMUM VENTILATION.

- PREVAILING BREEZES FLOW BENEATH HIGH-CANOPY TREES WITH LITTLE UNDERSTORY GROWTH.

- HOUSES FACE SOUTH

because they store a great deal of energy during the day and re-radiate it at night. These factors become important in selection of materials and colors for pedestrian and bicycle path pavements as well.

Shading and Solar Access: Shading of adjacent structures during the winter when sunlight is desired for heating the interior space, can be a problem. During El Centro's summers, shading may in fact be desired, because the total sunlight hitting a shaded structure would be reduced, thereby reducing summer heat gain within.

Subdivision design should take into account the seasonal shading conditions created by a particular site layout and attempt to alleviate winter shading of adjacent structures. Shading will be reduced during winter days by simply maintaining the north-to-south orientation of lots in an otherwise typical subdivision. Flexible requirements for setbacks and sideyards will further enable the design of an energy efficient subdivision.

Clustered Development: Flexible clustering standards such as incorporated in many planned unit development ordinances will also allow further energy conservation. Attached units which share common walls, in general, use significantly less energy per unit than single family detached units. This is due to a number of factors including: (1) the reduced ratio of surface area to interior volume ratios, lessening heat exchange; (2) shared heating, cooling and ventilation systems affording greater efficiency through economies of scale.

LAND USE PLANNING

On the larger community scale, mixed land use is generally cited as a method of reducing the frequency and length of vehicle trips and thereby reducing energy use. The provision of small shopping and employment centers interspersed within residential areas may encourage the use of alternative modes of transportation such as walking or cycling.

Because of El Centro's fairly compact size, concentration of residential and commercial development in and around the central city area should have the same effect of reducing the need for vehicle use. Such development could enable walking and cycling to and from the downtown area.

The concept of concentrated and balanced development of the city is consistent with El Centro's goal of maintaining a vital downtown commercial area, as well. Additionally, concentrated development will aid in conserving surrounding agricultural land uses.

The phased expansion of public utilities and services such as water and sewer, will help in curtailing sprawled land development. Combined with use of a Development Rating System (outlined in the Land Use Element), the implementation of these two concepts will reinforce compact forms of development.

COMMERCIAL AND INDUSTRIAL DEVELOPMENT

Many of the same considerations discussed above are applicable to commercial and industrial buildings.

The effectiveness of natural lighting is reduced as buildings become larger in floor area, requiring more artificial lighting and therefore more energy. Minimizing the southern exposure of buildings, and incorporating skylights, and courtyards into building design will help to reduce indoor temperatures, and maximize natural lighting.

Concentrated development of industrial activities would increase the economy of collecting and recycling waste heat among different plants, a concept called "cogeneration."

PUBLIC PROGRAMS

On April 1, 1978, the City established a recycling center for the recovery of waste resources: aluminum and steel cans, glass, and newspaper. The Center will also be a collection point for office waste paper, and negotiations are currently underway to establish a used oil collection facility. Citizens support the waste recovery program by voluntarily separating and transporting recyclable resources to the Center. Thus far, the financial incentives of a cash purchasing program for recyclable materials has resulted in a very high community response.

The savings of energy by recycling resources instead of fabricating new materials, can be dramatic. 95% less energy is required to produce cans from recycled aluminum than from aluminum ore. Recycled glass can save 30% of the energy used to manufacture bottles. Similar magnitudes of energy savings are possible by using steel and paper recyclables.

Revenue projections indicate that the sale of these collected resources will be sufficient to pay the salary of one full-time employee to manage the Center.

This section on energy use and conservation incorporates many of the principles which have been presented in all of the elements of this Plan, the Land-use and Circulation elements in particular.

A few of the basic concepts of energy conservation have been presented here. These, as well as other aspects should be explored in further detail, including:

Retrofitting buildings for energy conservation;

Measures for reducing commercial and industrial energy useage;

The potential of using wind for local power generation;

Conserving energy through agricultural practices;

Insulating buildings to reduce heat exchange.

IMPLEMENTATION

There are a number of ways in which energy conservation can be implemented through the planning and governmental processes.

The zoning ordinance: (1) amend planned unit development controls to include incentives for energy efficient project designs; (2) modify existing setbacks and yard requirements to allow better design for sun exposure; (3) amend the ordinance to protect solar access through building height and landscape controls.

The building code: modify requirements to include energy performance standards for all structures, and to reflect specific local climatic considerations.

The subdivision ordinance: (1) incorporate north-to-south lot orientation as a design standard; (2) reduce the specified widths of local streets; (3) require provisions for off-street parking; (4) provide incentives for including bike and pedestrian path systems in the subdivision design; (5) require use of functional landscaping to shade buildings and surrounding land areas; (6) implement a Development Rating System for determining the energy efficiency of the proposed development.

The environmental review process: (1) incorporate energy considerations into the initial impact assessment; (2) require full accounting of the potential energy impacts of a project when an Environmental Impact Report is required.

APPENDIX

GLOSSARY OF TERMS

Conduction : Heat flow by movement through solid materials

Convection : Heat flow by movement of air

Cooling Degree Days : A measure of annual cooling needs based on time plus the difference between the mean daily outdoor temperature and 65 degrees Farenheit (Example: $75^{o}F$ mean temperature $-65^{o}F = 10^{o}$Cooling Degree Days for that day)

Energy Efficiency Ratio : (EER) The ratio in BTU's output to total input in watts The higher the ratio, the more efficient the unit

Glazing : Glass wall areas; may be openable or not

Heat Gain : Capacity of materials to transmit heat to building interior

Heat Loss : Capacity of materials to transmit heat to building exterior

Heating Degree Days : A measure of annual heating needs based on time plus the difference between 65 degrees Farenheit and the mean daily temperature (Example: $65^{o}F - 55^{o}F = 10^{o}$ heating degree days for that day.)

HVAC : Heating ventilating and air conditioning systems within or associated with a building.

Insolation : The passage of sunlight into a structure, through a window or opening

Peak Demand: A daily or annual high-use period (For electricity the seasonal peak demand occurs during the summer when air conditioning is used, and daily during the 5 to 7 p.m. period when home energy use is at its highest.)

Retrofit : Supply with new equipment, parts or features after completion of building construction

CONSERVATION OPPORTUNITIES

1. Cluster or zero lot line
2. Solar orientation of lots
3. Solar orientation of buildings
4. Re-design or re-locate project
5. Maximum glazing on south
6. Avoid west glazing
7. Shade glazing in summer, south and west
8. Attic ventilation
9. Vestibule entrance
10. Insulate against heat gain and loss
11. Minimum paved area
12. Minimum length utility and drainage lines
13. Avoid paving adjacent to building
14. Narrow roads
15. Minimum grading
16. Natural ventilation and light
17. Solar space heating and cooling
18. Solar water heating
19. Minimum hours of lighting
20. High efficiency lamps
21. Hike and bike trails
22. Wind break
23. Shade west walls
24. Deciduous shade trees
25. Climate-adapted plants
26. Neighborhood pool and other recreation
27. High efficiency mechanical systems and appliances
28. Avoid gadgets (gas lamps)
29. On-site wastewater treatment
30. Street shade trees
31. Energy-efficient vehicles and machines
32. Avoid shift from gas to electricity
33. Provide public transportation
34. Energy-efficient materials, i.e., wood vs. aluminum

Source: Contra Costa County Energy Resources & Conservation Study, Contra Costa County Planning Department, CA, 1976.

ENERGY CONSIDERATIONS FOR ENVIRONMENTAL IMPACT ASSESSMENT

1. Project Description

   A. Identify energy consuming processes and equipment for construction, operation, and/or removal;

   B. Identify energy conservation equipment and design features;

   C. Provide these items in terms of initial and life-cycle energy costs or supplies

2. Environmental Setting

   A. Inventory of existing energy sources by fuel type

   B. Inventory of existing energy uses by fuel type

   C. Identification of climate factors such as winter winds, summer ventilation, solar insolation and heating and cooling degree days which could affect project energy use

   D. Discussion of off-site relationships, e.g. distance to residential areas, schools, shipping, parks, raw materials supplies, and employment centers which could affect long-term energy use for transportation

3. Environmental Impacts

   A. Energy requirements and efficiencies by amount and fuel type and initial versus long-term costs over project life cycle time for construction, operation, maintenance and/or removal:

      1. Buildings
      2. Streets and roads
      3. Utilities, street lights, pumping of water and/or sewage
      4. Storm drainage facilities
      5. Landscaping
      6. Transportation

   B. Effects on energy source: local and regional

   C. Effects on energy use including peak hourly and/or seasonal demands

   D. Provide these items as basic information and delineate the difference between the energy pictures without the proposed project and with the proposed project

4. Unavoidable Adverse Impact: Net Energy Demand: Construction, Operation, Maintenance, and/or Removal

5. Mitigation Measures (including but not limited to)

   A. Project design

      1. Site preparation, e.g. eliminate unnecessary grading, reduce street length, and areas of paved surfaces, shorten drainage and utility lines, maintain natural drainage channels

      2. Climate considerations, e.g., lot and building orientation, shading of buildings, glazing, insulation, solar energy capabilities, cold ponding areas

      3. Energy efficient mechanical system and appliances

      4. Alternative fuels or energy systems

      5. Design of potential retrofit efforts

      6. Recycling and self-sufficiency

      7. Utilization of waste heat and materials

      8. Development of total systems concepts to reduce wasteful and inefficient production processes and facility system operations; e.g., solar considerations no plant and process design, materials handling and storage, fuel saving considerations, energy transmission and conversion improvements, insulation, process steam; space heating and air conditioning, degree to which labor is to be substituted for energy consuming equipment.

   B. Consideration of peak hour and peak season restrictions

   C. Allocation of petroleum products

   D. Encourage energy conservation in transportation

6. Alternatives, evaluate energy consumption for project alternatives, e.g. cluster development or planned development

7. Short-term gains versus long-term impacts: short-term energy benefits as opposed to effects on long-term energy sources and fuel types, effects of rising fuel costs

8. Irreversible commitment of resources, use of non-renewable resources during construction and maintenance and operation

9. Growth inducement: effect on primary energy sources and distribution systems

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OPEN SPACE



The legislative intent of this element is that cities and counties recognize open space land as a limited and valuable resource which should be conserved wherever possible (CA Government Code Section 65562).

The basic objective of conserving open space within El Centro is proposed as follows:

To direct future expansion of the city, improve that portion of the city now in existence, and preserve places of unique natural quality or community significance.

By definition, open space is any parcel or area of land or water, which is essentially unimproved. Designated open space serves a number of functions:

delineating and directing urban growth;

preserving natural habitats and ecosystems;

providing access to, and conservation of, important resource areas;

protecting community health, safety and well-being.

The following principles for preserving open space shall apply:

to recognize the economic and aesthetic value of open space to property owners and residents of the city.

to identify areas potentially hazardous to health and safety where development should not occur.

to coordinate the City's open space system with other open space systems and plans of county, regional, state and federal agencies.

to view open space preservation as a way of maintaining traditional land use activities, and the rural character of the community.

EXISTING OPEN SPACE

El Centro is primarily surrounded by agricultural lands which are considered to be open space for the production of food and fiber. Agricultural open space surrounds the municipal sewage treatment plant which is just north of the City.

Recreational open space is provided by the parks scattered throughout the existing city. Park space is presently about 3.5 acres per 1000 population, which is less than the accepted standard of 4.0 acres per 1000 population. However, the effective acreage of city park space is larger than indicated because many neighborhood parks are located adjacent to school playgrounds. Several parks administered by Imperial County, State and Federal agencies are located in the El Centro region.

Irrigation and drainage canals network the City's area of influence and some residential portions of the City. As urban development expands into the immediately adjacent farmlands, these canal right-of-ways will remain as open space, to provide access for maintenance and to protect water flow capacities.

The railway beds also provide a type of open space which defines the City and its historic growth. Should any of these tracks be abandoned, the right-of-ways could be maintained as linear open space.

The following use categories have been considered in developing specific recommendations for open space preservation:

Natural resources open space: for preservation of natural resources including areas for the preservation of plant and animal life, particularly habitat areas for fish and wildlife species. Most of the natural

flora has been replaced by cultivation in the El Centro area. The remaining "natural areas" exist mostly along irrigation canal right-of-ways and other lowland areas created by agriculture and irrigation land uses.

The canal system provides habitat for saline adapted plant species. Populations of a number of fish species live in the canals. The mosquito fish has been introduced by the Imperial County Health Department for mosquito control, and species of Tilapia have been introduced to control aquatic weeds.

By bringing irrigation water to the desert, the canal system has created an aquatic habitat within a naturally arid environment. Consequently, the canal system provides opportunities to fish and observe wild species in a unique manmade "natural" environment area.

Resource conservation open space: for the managed production of resources, including range land, agricultural lands, areas of importance to the production of food or fiber, and areas containing major mineral resources. Valuable agricultural lands within the city and its area of influence should be preserved for crop production and also to provide buffer space between urban development and the surrounding agricultural region. All area of influence lands not designated for urban uses will be considered agricultural resource conservation open space.

Recreation open space: including areas of outstanding scenic, historic and cultural value; areas for park and recreation activities and linear recreation areas such as utility easements, river and canal banks. A

rather unique recreational space has been provided by the canal right-of-ways, where quite a bit of walking and playing activity takes place.

Health and safety open space: including areas requiring special management and/or separation from other land uses, due to potentially hazardous conditions, such as seismic fault zones, unstable soil areas, flood plains and areas required for protection of water quality. The irrigation canal system is particularly dangerous in residential areas where unsupervised children have easy access. Controls must be developed to restrict this access, either by fencing the canals or covering them in some manner. Agricultural activities such as pesticide and crop dusting creates another hazardous condition. The type and method of these spraying activities should be restricted within the City's area of influence to reduce the adverse effect from airborne drift of chemicals into adjacent residential areas.

Greenbelt open space: generally provides buffer zones between potentially incompatible land uses, such as between industries and homes.

Areas to be Preserved

The following areas are recommended for open space preservation:

1. The land immediately surrounding the municipal water treatment plant, south of State Highway 8: this area should be retained for development of a proposed recreational park, which may include a golf course and a man-made lake for water supply storage.

2. Irrigation Canal System: The canals are, of course, critically important to agriculture. The canal rights-of-way are also used quite a bit for recreation, particularly for walking and biking. These rights-of-way should be preserved for protection of and access to the entire irrigation network for maintenance, and also to allow recreational uses such as walking and horseback riding. In addition, the canal rights-of-way should be preserved for the habitat areas they provide for water related fauna and flora species.

3. Greenbelts:
a) along either side of State Highway 8: as part of the on-going effort to upgrade the visual quality of this corridor. Continuous greenbelt strips will provide a sound & visual buffer zone between the highway and adjacent land uses, particularly residential areas.
b) extension of the existing linear park to the west along the south boundary of Tract #98: to provide a buffer area between future residential development and the adjacent industrial area.
c) land between the rail road rights-of-way and adjacent residential land uses: buffer zones should be maintained between these two land uses, to reduce the impact of railroad noise upon nearby residents.

4. All agricultural land not designated for urban uses.

IMPLEMENTATION PROGRAM

The basis for protection of open space lands is given by Section 65567 of the California Government Code:

> "No building permit may be issued, no subdivision map approved, and no open space zoning ordinance adopted, unless the proposed construction, subdivision map or zoning ordinance is consistent with the local open space plan."

The program for the provision of open space shall be implemented through the following ordinances and procedures:

(1)
a) Subdivision Ordinance: The subdivision ordinance contains provisions for the dedication of land for park or recreational purposes. (A fee can be paid in lieu of a land dedication.) The ordinance requires a land dedication (or equivalent) calculated on the basis of a ratio of a minimum of five acres of park for each 1000 people. These dedications will insure adequate open space in newly developed areas.

It is suggested that "in lieu fees," and other funds, be used to set up a revolving fund to be used for the acquisition of park and open space lands. Raw land for future parks and open space would be purchased at substantially lower prices before development takes place. The fund would be replenished by collected fees in lieu of land dedications at the time of development, allowing for further acquisitions to meet anticipated future needs.

b) Planned Unit Development: The zoning ordinance makes provisions for Planned Unit Development (PUD) as a way to encourage residential environments with more useable open space than provided under traditional development standards. The City Council, as a condition of project approval, may require that the development rights of open areas in the project be dedicated to the city in order to insure permanent open space.

(2) Open Space Zoning: The zoning ordinance now includes an open space zone to be applied to designated open space areas including agricultural lands.

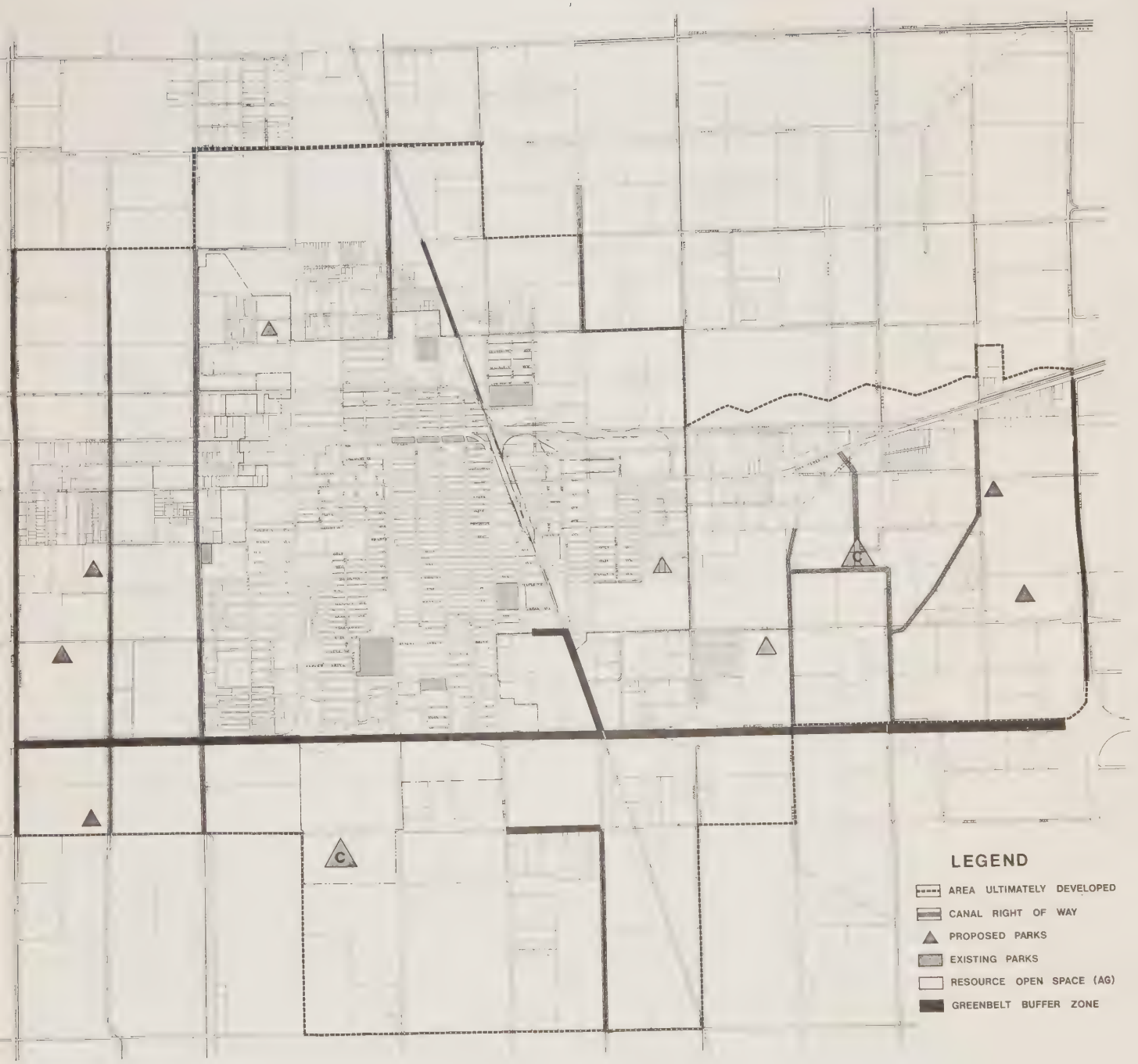
(3) Development Rating System: Use of the development rating system for proposed projects (described in the Land Use Element) would require that all new development be consistent with the objectives and principles of the General Plan, which include those of this Open Space Element.

(4) Agricultural Preserves: Voluntary enrollment by owners of local prime farmlands into agricultural preserve contracts will protect the continued use of these lands for agricultural open space. The Williamson Act, passed into law by the State legislature, is administered by the County. It insures that owners of prime farmlands will only be taxed for the agricultural use-value of their lands, in return for guaranteeing that the land will be kept in agricultural use for the term of the contract.

(5) Open Space acquisition: Steps are currently being taken to purchase the lands immediately surrounding the water treatment plant south of the city. These lands will be used for recreation open space.

(6) Required dedication: The City should require dedication or seek acquisition of the land along either side of Interstate 8 to provide continuous greenbelt strips.

FIGURE 41



OPEN SPACE AREAS

EL CENTRO

THE FOLLOWING ELEMENTS
ARE EXCERPTS FROM THE
GENERAL PLAN ADOPTED IN 1973

NOISE

NOISE ELEMENT

Introduction

The State Legislature has declared to be state policy that "all necessary action to provide the people of the state with freedom from excessive noise" be taken. Preparation of the Noise Element of the General Plan is a step in this direction. Section 65302 (f) states in essence that the Noise Element should determine noise levels of existing and proposed transportation facilities and conclusions must be drawn regarding appropriate site or route selection alternates and noise impact upon "compatible" land uses.

The State Law defines the Element in these terms:

(g) A noise element is quantitative, numerical terms, showing contours of present and projected noise levels associated with all existing and proposed major transportation elements.
These include but are not limited to the following:
(1) Highways and freeways
(2) Ground rapid transit systems
(3) Ground facilities associated with all airports operating under a permit from the State Department of Aeronautics.

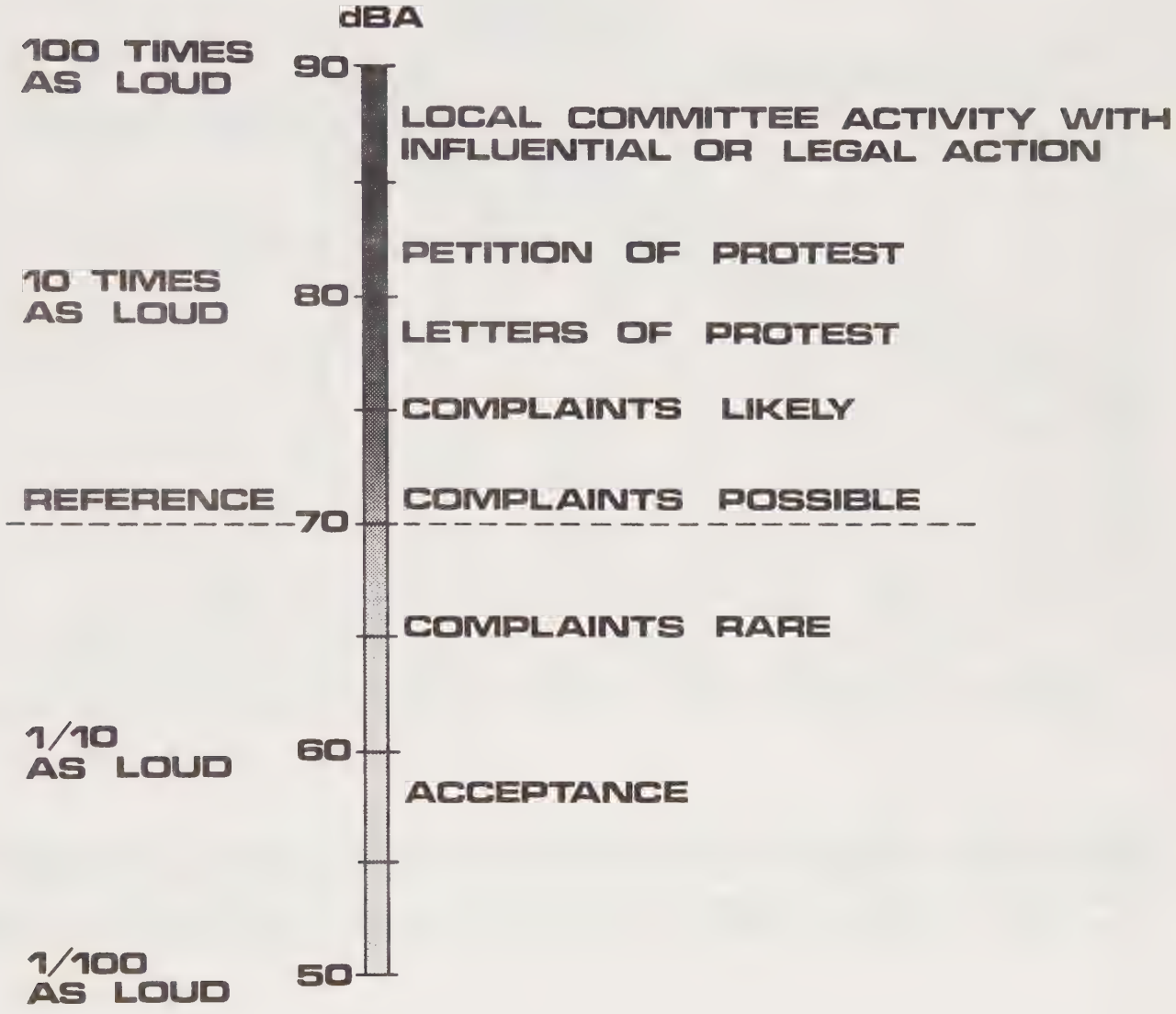
The growth of population in urban areas and advanced technology in transportation have produced a complicated collection of noise problems. While the tolerance for noise by most people is very high, the actual physical and psychological effects can be serious, resulting from various levels of noise stress.

While often the more recognized noise problems, such as jet aircraft, receive the greatest public attention, these may be specialized noise problems. We should also be dealing with the broad implications of noises. The measure and impact must be gauged by both the magnitude of the noise and the number of people affected.

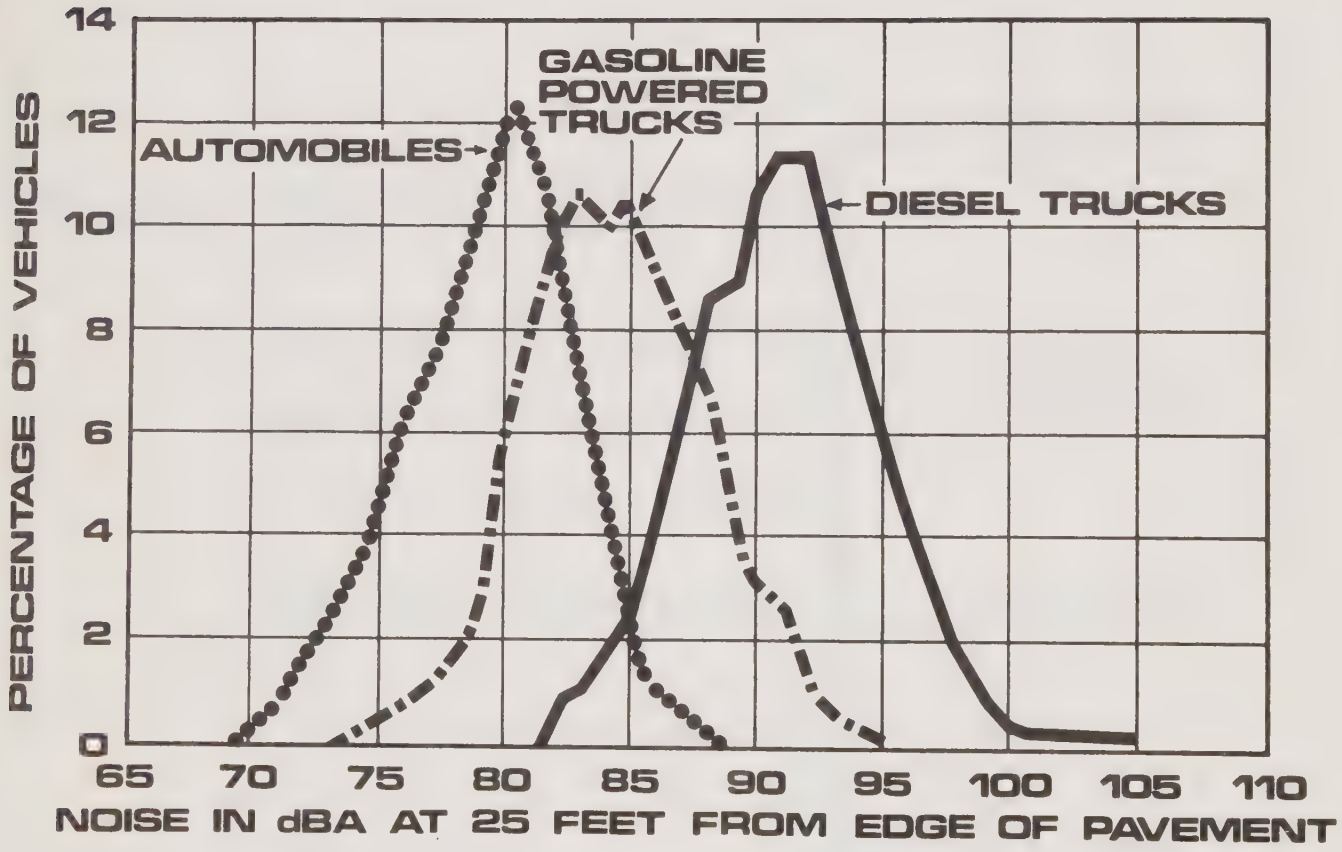
The adverse and widespread impact of noise pollution is increasingly being recognized by the general public as well as by the specialists. A well-informed public regarding sources and effects of noise and measures needed to reduce noise can effectively involve persons to participate in the planning and decision process to diminish the adverse effects.

Industrial Noise

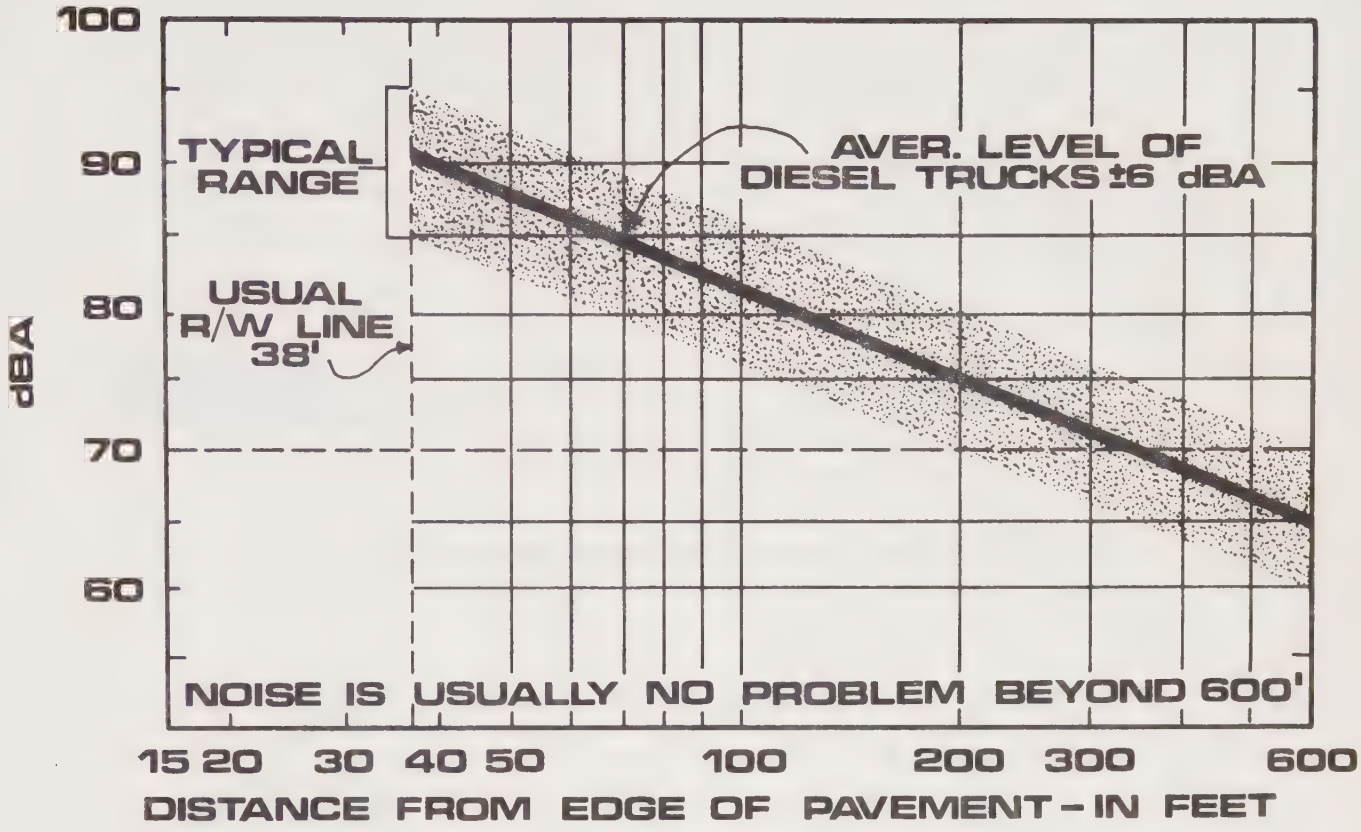
Certain of today's industries involve operations producing high noise levels. This may constitute a particularly insidious form of noise exposure to personnel in that exposure durations may be relatively constant over a working lifetime. These long-term exposures to high noise levels represent a potential hazard and may cause permanent hearing loss in intensive situations. Fortunately, this particular phenomenon is the subject of much study and attention. Controls in the form of noise reduction at the source, enclosures or isolation of the noise source and propagation path and personal ear protection are employed to reduce potential risks. Periodic hearing evaluations for employees are also carried out to insure a safe working environment. These practices are now monitored, in many cases, under the aegis of State or Federal legislation.



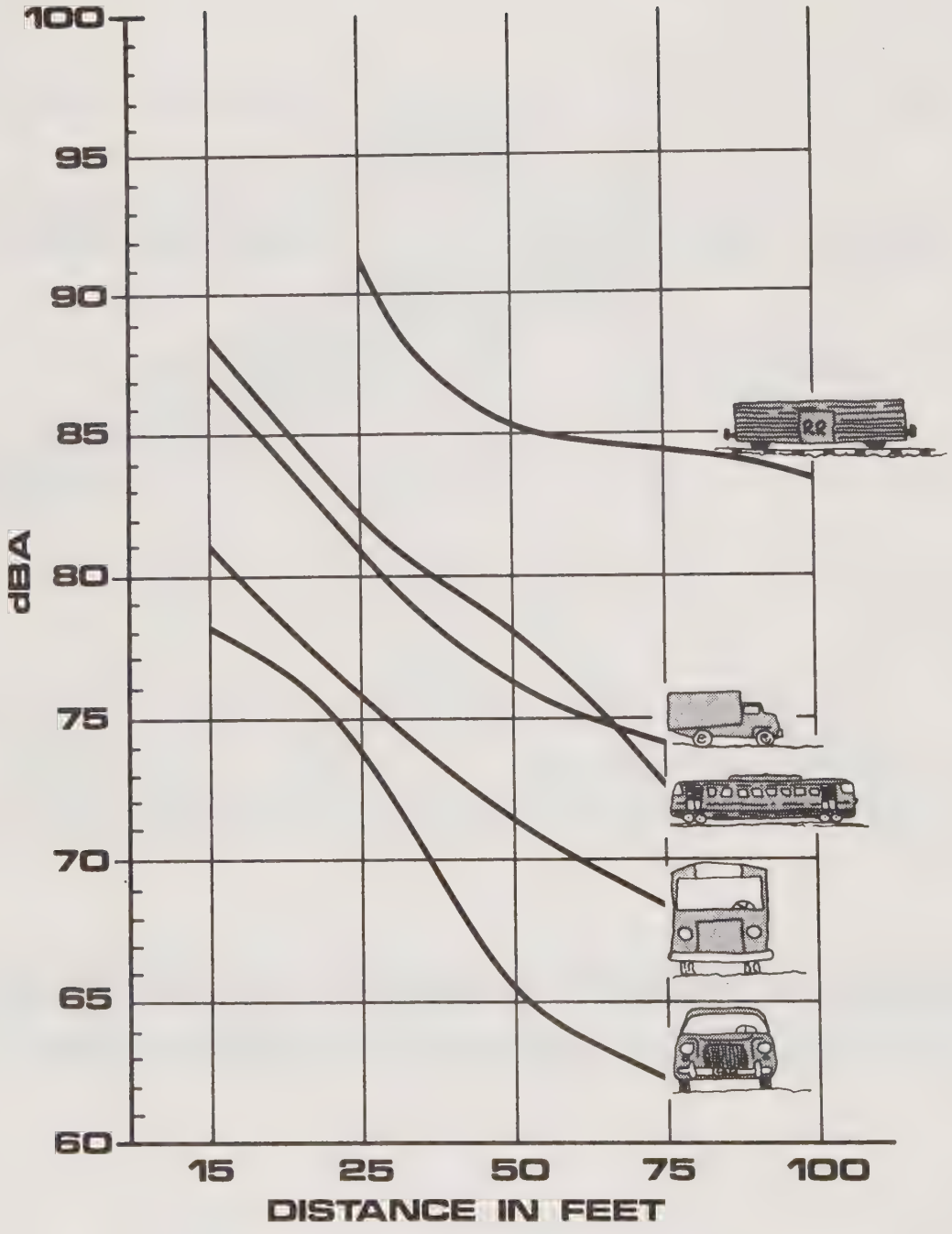
TREND OF PUBLIC REACTION TO PEAK NOISE NEAR RESIDENCES



MEASURED NOISE DISTRIBUTION CURVES OF HIGHWAY VEHICLES



DIESEL TRUCK PEAK NOISE RANGE OVER OPEN TERRAIN



SURVEY OF SPECIFIC NOISE SOURCES

The relationship of industrial noise pollution to neighboring land uses requires a review of current policies for the enclosure of industrial uses within buildings, the establishment of buffer structures and landscaped open spaces that will reflect or absorb noise, and a more compatible general location of industrial areas as they are related to present and future living environments.

Airport Noise

Within Imperial County, the Airport is geographically removed from urban centers, and jets have been limited in size and in their use of the airport. There is still a need to be concerned, for the roar of jet engines and compressors produces a wide-ranging impact over a large area surrounding the airport, even though the immediate effect is on land outside of the current City boundaries.

The roar of the large jet engines, as well as the landing and take-off patterns can have an impact on the community, especially in the area of influence adjacent to the airport. Commercial turboprop jets, such as those used by Air West, make their own contribution to the situation. With the growth and expansion of the City, the "removed" status of the airport may change. In planning for the future, the City should cooperate closely with the County in planning development in areas where the decibel rating is in excess of 60 dBA.

Highway Noise

Other aspects of transportation noise that are of more immediate concern to the people of El Centro are those related to surface transportation. Motor vehicles on major throughways and railroads create noise levels at a significant level. Trucks are the predomininant source of noise pollution. The heavy traffic flow and the varying speeds and associated shifting of gears and racing of motors creates measurable "impact areas" along major streets. Living conditions and property values can be adversely affected.

In the past the costs of excessive noise from transportation facilities have been passed on to those in the vicinity rather than being borne by the producer of the noise.

Sources of Excessive Noise in El Centro

Following is a description of the problem noise areas within the City of El Centro. These consist of the major arterials, intersections and the railroad. The readings were taken for six minute periods at a distance of either 30 or 50 feet from the center street, depending on the width of the road right-of-way. Some of the readings were taken at peak traffic hours.

Ambient noise levels were measured in addition to the traffic peak levels. As defined by the State of California, Department of Public Works: "If the location is reasonably quiet, say 50 to 60 dBA or less, the automobiles are rare and no higher

than 65 dBA, the background or ambient noise will determine the description of the noise environment."

"If the location is exposed to frequent noise peaks from local or highway traffic, the noise character is determined by the noise peaks." Within El Centro, those areas with frequent peaks show readings of between 70 dBA and 90 dBA and are indicated on the accompanying map (by noise contour lines). These areas are considered to generate noise at the nuisance level.

Locations with readings of 70 dBA:

- Railroad (full length)
- Park Avenue (full length)
- State Street (full length)
- Interstate 8 (full length)
- Imperial Avenue (full length)
- Fourth Street (full length)

Areas with readings of 80 dBA:

- Adams Avenue (full length)
- Fourth Street (between the railroad and Ross Avenue with the exception of a strip between Holt Avenue and Vine Street)
- Imperial (between the railroad and Olive Avenue, and between Pepper Drive and Interstate 8)

Areas with readings of 90 dBA:

- Imperial and Adams (Intersection)
- Adams and Eighth (Intersection)
- State and Fourth (Intersection)
- Main and railroad yard (Intersection)

Railroad and Dogwood (Intersection)
Area between Broadway, Fourth, State and the East Boundary of the railroad yard.

It is apparent that the railroad, major arterials, and intersections are significant in their contribution to the nuisance noise level for reasons of increased traffic volumes with numerous trucks. While development along the freeway is limited at the present time, this area is subject to the same potential impact and should be taken into consideration. Current F.H.A. regulations would not support residential development in areas where the noise level is above 60 dBA.

The railroad is a significant part of the urban scene in El Centro in terms of land use. It is an important part of the industrial and agricultural economic base of the community. Therefore this mode of transportation has an impact on the noise levels in the City and must be taken into consideration in land use planning because of its noise impact.

Hazardous Side Effects from Noise*

At first consideration, effects from noise generated from those kinds of sources which are typical of the urban scene, and which exist in the City of El Centro, may not seem significant. However, following are some of the hazardous side effects which are known to have been brought on

*Noise Pollution, the Unquiet Crisis by Clifford R. Bragdon, 1971

in given situations by excessive noise levels. Revealing work already done has indicated, for example, that vasoconstriction and pupil dilation begin to appear at 70 decibels. A three year study indicated that noise-induced vasoconstrictive effects appeared with repeated noise bursts lasting from 300 milliseconds up to 60 minutes.

The community noise levels experienced by an urban population definitely fall into the range where they produce physiological responses and possible health impairment. Generally, it is suggested that the maximum wide band noise level (common in community environments) should not exceed 88 decibels, regardless of duration. This decibel level must not be exceeded if we are to remove the hazard potential of impaired hearing, and neural humoral stress response.

Community noise levels often exceed industrial working noises. Under the provisions of the Walsh-Healey Public Contracts Act and the Occupational Safety and Health Act, occupational noise exposure levels have been set. Protection against the effects of noise must be provided when the overall noise level exceeds 90 dBA over an eight-hour period. Within El Centro, portions of the railroad yard generate noise levels of 90 dBA.

Speech Interference

There are maximum permissible levels of background noise, known as speech interference levels (SIL). This is based on average decibel readings. An SIL reading of over 75 decibels prohibits telephone conversations; 65-70 decibels would barely

permit reliable communication over a two-foot distance with a raised voice; at 55-60 decibels, telephone conversations are nearly unimpaired, and normal communication can occur up to three feet. An SIL of less than 55 decibels is desirable for any office operation. In El Centro many offices are located along the heavily used arterials, Adams and Imperial Avenues.

Sleep Interference

Experiments undertaken in Canada have led to the conclusion that a person's sleep level is altered when he is exposed to vehicle noise as low as 55 dBA. Similar findings have been reported in West Germany. When vehicle noise reaches 55-60 dBA, this intensity affects even the deepest sleeping state. Studies indicate that in order to insure sound uninterrupted sleep, noise levels should not exceed 35 dBA measured inside a dwelling unit. As per research done by the Department of Transportation, Bureau of Public Roads, noise controls are usually needed along the highway wherever the external noise peaks 70 dBA at the nearest dwelling unit in residential areas. With the major arterials generating decibel levels of 70, and in some areas more, those motels and residences located adjacent to these arterials are probably greatly affected, as is the hospital located on Imperial.

Task Interference

As noise reaches higher decibel levels, adaptation becomes more difficult. In vigilance task experiments requiring continuous visual attention,

there are increasing errors and failures to notice unexpected events at levels higher than 90 dBA. In direct contrast to mechanical or manual tasks, those tasks requiring higher order mental faculties (problem solving, creative thinking, etc.) are highly susceptible to noise disruption. Man's ability to retrieve previous thoughts is often slowed down in a noisy environment. The time necessary for the brain to retrieve and store is lengthened. Studies have indicated that short term noise exposure with students resulted in difficulty completing math and reading tests. As noise levels rose, students speed decreased, and lower test scores were obtained. In El Centro, schools and offices which are located adjacent to the major intersections, railroad, and the heavily used arterials (the first two of which generate decibels readings of 90) are probably greatly affected. Wilson School (located adjacent to Imperial Avenue) and Kennedy Junior High (located near the railroad) are most likely being subjected to undesirable noise levels.

RECOMMENDATIONS

Noise Element in Relation to General Plan

The Noise Element is related to the Land Use and Circulation Elements since it provides noise level standards which should be reflected by establishing compatible land use. Noise level standards can thus control transportation facilities (or their design) in relation to existing or planned land use, or conversely the decision to locate a transportation facility in a particular place could require decisions to permit only those uses which can tolerate the noise produced. The Noise Element is also closely related to the Open Space Element, because of the impact that noise can have on the enjoyment of quiet pursuits in open space. Conversely, open space can be employed to buffer noise sources from sensitive uses through providing distance and extensive tree planting. The Conservation Element is related in that it could provide policy for corrective measures to reduce the impact of existing noise sources through off-site measures.

In order to achieve the broad state objectives, the following recommendations are included in the state guidelines. The Noise Element should include:

- A statement of general policy indicating the local jurisdiction's general intentions regarding noise and noise sources in the community. This should be responsive to local conditions and issues.

- Noise contours should be shown in minimum increments of five decibels and should be continued down to 65 dBA. For regions involving hospitals, rest homes, long-term medical or mental care, or outdoor recreational areas, the contours should be continued down to 45 dBA.

- Standards and criteria should be set relating noise levels to types of use, and environmental factors.

- Standards and criteria should be established that transportation facilities would have to meet in relation to established types of uses. (It should be noted that control of some noise sources has been pre-empted by state and federal governments.)

- Standards and criteria should be set for compatible noise levels for local "fixed point" noise sources.

- A guide should be established for Implementation.

- An appendix should be included describing methodology of preparation and sources of data.

- Standards relative to compatible uses are needed to provide meaningful evaluation of impact noise.

Policies and Actions

It is recommended that the following policies and actions be adopted as part of the General Plan to reduce and control noise pollution:

- Planning for the future of the urbanizing areas of Imperial County should be undertaken as soon as possible so that the present unique opportunities to avoid or control noise pollution will not be lost.

- In cooperation with the County, develop proper zoning controls that will prohibit inappropriate development around the airport.

- Develop a "truck route" system that will minimize the effect of traffic on surrounding residential neighborhoods.

- Special noise control standards should be developed for building and construction.

- The city should take measures to mitigate adverse effects of noise levels where such would be incompatible with existing or planned land uses or to adjust the land use pattern in relation to the noise source.

- The city should play a major role in the control of noise pollution through the development of noise codes. These would reduce the numerous sources of small noises which exist in communities but go unrecognized as a general problem and are only responded to when they cause serious agitation. Performance standards do exist, and could be applied

through activities of the city building and safety department. Builders and designers would be warned in advance of possible noise sources and be directed to control them. Noise may be checked at its source through a small noise meter (sensitive to performance standards). Further development of quantitive codes within which to control noise is needed at the local level, such as setting standards in different zones, (commercial and industrial, for example).

- A special committee could be appointed or other procedure devised for developing citizen awareness of problems, issues and opportunities.

- Proposals should be reviewed with citizens through committee conference, or other forums.

- Freeway buffering should be used to maintain an ambient noise level no greater than a specified level measured during a given time period on any residential yard adjacent to a freeway or freeway access ramp, earth berms, landscaping, decorative block or concrete walls, or a combination of both, and trees should be installed within a buffer strip.

  Specific standards for the buffer strip such as width, height, and all improvements within the strip would be provided by the approving authority to aesthetically achieve the agreed upon average ambient noise level.

  Landscape materials appropriate to the loca-

NOISE ELEMENT
SURVEY FINDINGS – MAY 1973
EL CENTRO, CALIFORNIA

scale in feet
500 0 500 1000 1500 2000 NORTH

1973

SIMON EISNER & ASSOCIATES
PLANNING CONSULTANTS
1414 Fair Oaks Ave. (213)682-8181
South Pasadena California 91030

LEGEND

70 dBA OR LESS	70–80 dBA	80–90 dBA	90 dBA OR MORE

SEISMIC

SEISMIC ELEMENT

INTRODUCTION

As a result of legislation recommended by the Joint Committee on Seismic Safety of the California Legislature and enacted in 1971, a seismic safety element is now required as a part of general plans in general law cities and counties and in charter cities. The element consists of an identification and appraisal of seismic hazards such as susceptibility to surface ruptures from faulting, to ground quaking, to ground failures, or to effects of seismically induced waves such as tsunamis and seiches.

The effect of this law is to require cities and counties to take seismic hazards into account in their planning program. The intent is that all seismic hazards are to be considered, even though ground and water effects are given as specific examples. The basic objective is to reduce loss of life, injuries, damage to property, and economic and social dislocations resulting from future earthquakes.

The location, magnitude, and time of another earthquake is unpredictable. However, it can be assumed that where there have been quakes in the past the probability of future quakes is almost a certainty. Therefore, what is done to reduce the damage done by the next quake is of primary concern in a seismic element.

In the interest of helping local communitiies develop such an element, the Governor's Earthquake Council of the State of California has prepared seismic safety guidelines which have been incor-

porated into this report. These interim guidelines have the endorsement of the State Office of Emergency Services, the California Division of Mines and Geology, the State Office of Planning and Research, and the State Department of Water Resources.

The following text identifies, very generally the existing seismic hazards of the Imperial Valley area. Recommendations are made for further in-depth geological and engineering studies, for the preparation of an emergency recovery plan and for the consideration of existing structures which are not up to standard. Recommendations are also made for the reduction of seismic risk to future development by evaluating proposed land uses with respect to hazard potential.

IDENTIFICATION, DELINEATION, AND EVALUATION OF EXISTING SEISMIC HAZARDS OF AREA

The following general hazard analysis will not take the place of detailed geological and engineering site investigations; it does, however, indicate that there are areas in which detailed investigations should be made prior to reaching a final decision on permitting specifically proposed uses. Upon acquiring additional information from investigations, this report could then serve as a guide for the application of land use restrictions, for the stringency of design and construction requirements from area to area, and for devising seismic disaster scenarios in the development of detailed contingency plans.

THE IMPERIAL VALLEY SITUATION

The Imperial Valley is a broad, flat, alluviated area that lies partly below sea level. It is cut off from the Gulf of California, to the south, by the Colorado River Delta. The lowest part of the Valley is flooded by the Salton Sea, an inland lake 240 feet below sea level, that serves as a sump for all drainage within the region.

El Centro is located in the southern portion of the Imperial Valley approximately 8 miles to the north of the Mexican border.

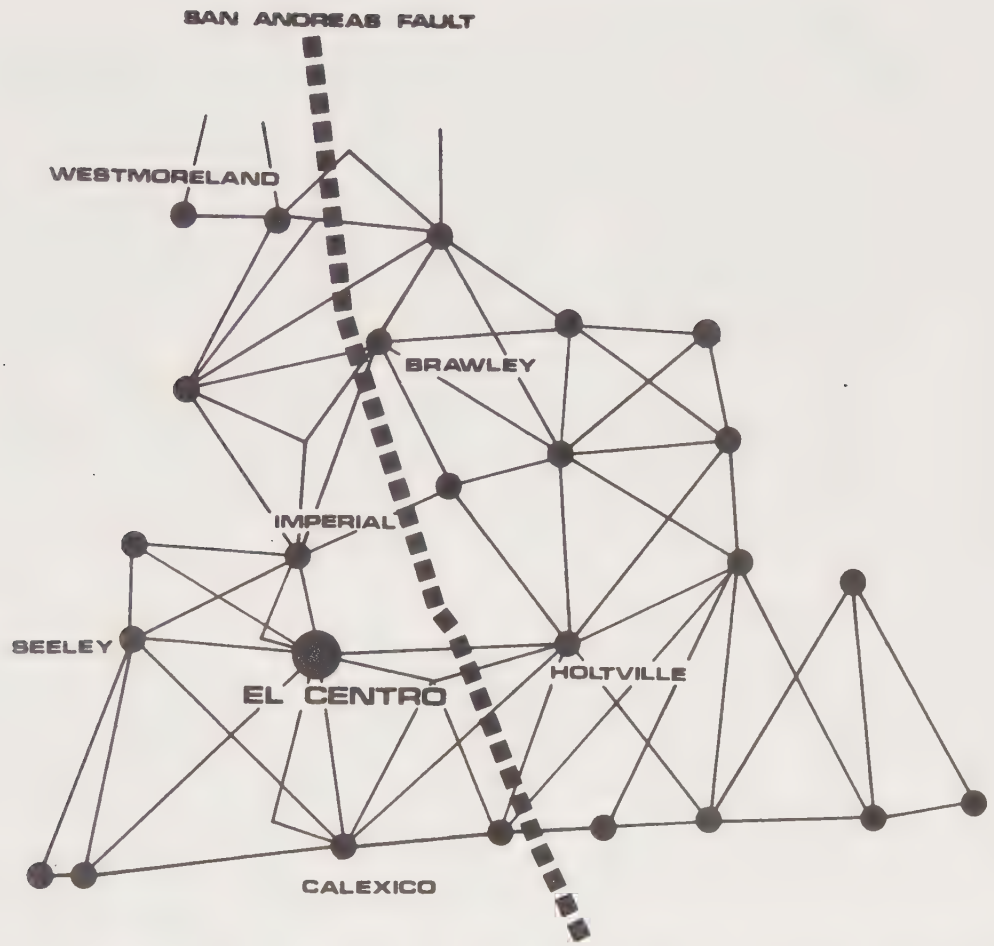
In recent years, when several deep wells were drilled for oil in the flat, alluviated portion of the Imperial Valley, all encountered non-marine sands and clays from top to bottom, with some lacustrine beds in the uppermost 3,000 feet. The

deepest of these wells was drilled to 12,313 feet near Holtville (8 miles east of El Centro), another to 3,350 feet near Westmoreland, another to 7,323 feet near Heber (5 miles south of El Centro), and still another to 8,647 feet in the Superstition Hills (approximately 20 miles north east of El Centro.)

The composition of geologic strata (bedrock and soil) determines what can be expected from an area as a result of ground shaking. It is therefore important to know the soil makeup in order to determine the design of structures proposed for an area. Those areas where landslides and mud flows will occur should also be identified.

How Fault Movement is Plotted

Triangulation nets are now a highly important source of information on the nature of earthquake movement. A first order Triangulation network covers the entire United States, and in California a much more refined system blankets the San Andreas Fault for its entire known route south of Fort Ross. In some areas, such as the Imperial Valley shown in the diagram below, the network is closely spaced so that even the slightest movements can be noted. Since elastic strain can accumulate in areas away from the actual fault line, the triangulation stations are extended even farther than shown here.



TRIANGULATION NETWORK

Existing Faults

The strain pattern in the Imperial Valley region is clearly defined. The primary strain features are the northwest-trending high-angle faults developed along the San Andreas, San Jacinto, and Elsinore zones. Movements along these faults are predominantly right lateral, with relative southeastward displacements of the northeast blocks, and vertical movements are local or only apparent.

The cities of Brawley, Imperial, El Centro, and Calexico have within the last 35 years, received damage from the movements of major faults in the San Jacinto fault zone. These are the Imperial and Superstition Hills Faults.

Imperial Fault

In relation to the City of El Centro, the Imperial Fault is located approximately five miles to the east. It is an historically active fault associated with an earthquake of major proportions in 1940 and again in 1966, both of which have well documented reports indicating surface faulting. In 1968 it was indicated that the fault had crept horizontally separating in a right-lateral sense.

Earthquake of May 18, 1940 -- Imperial Valley

Magnitude: 7.1 Maximum Intensity: X.

This is the earthquake that exposed the exact line of the Imperial Fault, which is the only known section of the San Andreas system near the U.S.- Mexican border. The ground was ruptured

for 40 miles from Volcano Lake in Baja California to a point near Imperial. There were seven deaths, and property loss was in excess of $5 million. The epicenter was located east of El Centro. Eighty percent of the buildings at Imperial were destroyed; 50 percent of Brawley's structures were severely shaken. Indirect damage to crops was substantial, owing to the disruption of drainage and flooding immediately after the break. Horizontal displacement across the completed but as yet unfilled International Canal was 14 feet, 10 inches, creating a permanent change in the U.S.-Mexican boundary line. The Alamo Canal in Baja California also was offset, and water spilling out of the broken channel caused a local flood.

Perhaps the most conspicuous area of surface rupture was on State Highway 98, eight miles east of Calexico. The roadway was broken by a four foot scarp, and rows of trees in an orange grove south of the highway and west of the Alamo River bridge were offset almost ten feet. The maximum horizontal displacements of the earthquake -- approximately 29 feet -- were measured in the area just south of the orange grove. Vertical movements were very slight.

Superstition Hills Fault

Within a few miles to the north of El Centro there are several faults which have been active historically, some of these are associated with

the recorded 1951 quake involving the Superstition Hills Fault, a well documented quake, showing surface faulting. In 1968 it was indicated that this fault had also crept horizontally, separating in a right lateral sense.

EPICENTERS

Knowing the location of an epicenter, even if the time-base and location accuracy limitations were overcome, represents the knowledge of raw data for use in seismic safety planning. The designations of epicenters must be interpreted in light of various assumptions and other data to be useful in local planning.

Those epicenters older than the installation of sufficient seismography for quantitative epicenter location (about 1933) are based on subjective reports and are sometimes located only to the nearest degree of latitude and longitude.

Within a four mile radius of the City of El Centro, are two earthquake epicenters. One which had a shock magnitude of 6.3 and occurred in 1915, for which there is no documentation indicating surface effects. The other epicenter just southeast of the city has 26 quakes recorded having a magnitude equal to or smaller than 7.1.

Within a 20 mile radius of El Centro there are approximately 45 epicenters all with recorded quake magnitudes ranging between 4.0 and 5.9. Several of these epicenters have had many recorded quakes.

Beyond the 20 mile radius there are are many more epicenters.

EARTHQUAKE INTENSITIES

El Centro is located in an area where there have been between 16 and 25 earthquakes that have produced a modified mercalli intensity of VI to VII in a given locality in the time interval 1810-1969. This information indicates in a very general way that when an area has experienced a certain number of occurrences of potentially damaging shaking in the last 160 years, it can be assumed that this same area might experience approximately the same level in the next 160 years. It does not indicate when quakes will occur and it does not indicate the level of shaking.

As indicated by the Mercalli Intensity Scale, a quake of the intensity of X, such as the Imperial quake, is felt by everyone. There is general panic, conspicuous cracks in the ground. In areas of soft ground, sand is ejected through holes and piles up into a small crater and, in muddy areas water fountains are formed. Most masonry and frame structures are destroyed along with their foundations. Some well-built wooden structures and bridges are destroyed. Serious damage is done to dams, dikes and embankments. Railroads are bent slightly. (See Mercalli Intensity Scale, next page)

MODIFIED MERCALLI SCALE OF EARTHQUAKE INTENSITIES

THE MERCALLI INTENSITY SCALE

(As modified by Charles F. Richter in 1956 and rearranged)

If most of these effects are observed then the intensity is:

-1- Earthquake shaking not felt. But people may observe marginal effects of large distance earthquakes without identifying these effects as earthquake-caused. Among them: trees, structures, liquids, bodies of water sway slowly, or doors swing slowly.

-2- Effect on people: Shaking felt by those at rest, especially if they are indoors, and by those on upper floors.

-3- Effect on people: Felt by most people indoors. Some can estimate duration of shaking. But many may not recognize shaking of building as caused by an earthquake: the shaking is like that caused by the passing of light trucks.

-4- Other effects: Hanging objects swing. Structural effects: Windows or doors rattle. Wooden walls and frames creak.

-5- Effect on people: Felt by everyone indoors. Many estimate duration of shaking. But they still may not recognize it as caused by an earthquake. The shaking is like that caused by the passing of heavy trucks, though sometimes, instead, people may feel the sensation

of a jolt, as if a heavy ball had struck the walls. Other effects: Hanging objects swing. Standing autos rock. Crockery clashes, dishes rattle or glasses clink. Structural effects: Doors close, open or swing. Windows rattle.

-6- Effect on people: Felt by everyone indoors and by most people outdoors. Many now estimate not only the duration of shaking but also its direction and have no doubt as to its cause. Sleepers wakened.
Other effects: Hanging objects swing. Shutters or pictures move. Pendulum clocks stop, start or change rate. Standing autos rock. Crockery clashes, dishes rattle or glasses clink. Liquids disturbed, some spilled. Small unstable objects displaced or upset.
Structural effects: Weak plaster and Masonry D* crack. Windows break. Doors close, open or swing.

-7- Effect on people: Felt by everyone. Many are frightened and run outdoors. People walk unsteadily.
Other effects: Small church or school bells ring. Pictures thrown off walls, knicknacks and books off shelves. Dishes or glasses broken. Furniture moved or overturned. Trees, bushes shaken visibly or heard to rustle.
Structural effects: Masonry D* damaged; some cracks in Masonry C*. Weak chimneys break at roof line. Plaster, loose bricks, stones, tiles, cornices, unbraced parapets and architectural ornaments fall. Concrete irrigation ditches damaged.

-8- Effect on people: Difficult to stand. Shaking noticed by auto drivers.
Other effects: Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Furniture broken. Hanging objects quiver.
Structural effects: Masonry D* heavily damaged; Masonry C* damaged, partially collapses in some cases; some damage to Masonry B*; none to Masonry A*. Stucco and some masonry walls fall. Chimneys, factory stacks, monuments, towers, elevated tanks twist or fall. Frame houses moved on foundations if not bolted down: loose panel walls thrown out. Decayed piling broken off.

-9- Effect on people: General fright. People thrown to ground.
Other effects: Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes. Steering of autos affected. Branches broken from trees.
Structural effects: Masonry D* destroyed; Masonry C* heavily damaged, sometimes with complete collapse; Masonry B* is seriously damaged. General damage to foundations. Frame structures, if not bolted, shifted off foundations. Frames racked. Reservoirs seriously damaged. Underground pipes broken.

-10- Effect on people: General panic.
Other effects: Conspicuous cracks in the ground. In areas of soft ground, sand is ejected through holes and piles up into a small crater, and, in muddy areas, water fountains are formed.
Structural effects: Most masonry and frame

structures are destroyed along with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes and embankments. Railroads bent slightly.

-11- Effect on people: General panic.
Other effects: Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land.
Structural effects: General destruction of buildings. Underground pipelines completely out of service. Railroads bent greatly.

-12- Effect on people: Panic
Other effects: Same as for Intensity 10. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into air.
Structural effects: Damage nearly total, the ultimate catastrophe.

* Masonry A: Good workmanship and mortar, reinforced, designed to resist lateral forces.
* Masonry B: Good workmanship and mortar, reinforced.
* Masonry C: Good workmanship and mortar, unreinforced.
* Masonry D: Poor workmanship and mortar and weak materials, such as adobe.

STATEMENT OF POLICIES AND OBJECTIVES

The local jurisdiction should have a clear understanding of the objective of the element, and as to how much seismic risk the community is willing to accept.

A policy statement should briefly outline the studies and actions expected to be undertaken to achieve that objective.

The degree of earthquake risk or safety that the community is willing to support is critical in the effort to develop and implement a seismic safety element. Citizens may be willing to accept relatively unregulated risks in the selection of their homes and homesites, but not in their hospitals and public buildings. These kinds of decisions should be considered by the public before being finally determined by the governing body.

EMERGENCY PLAN

From the previous physical description of the Imperial Valley, and the brief report of the seismic history of the area, it can be assumed that earthquakes will occur again. The cities located within the Imperial Valley will also continue to expand and grow. The issue that must be dealt with is how the hazards of an earthquake can be reduced to provide for the health and safety of the residents.

Contingency Plans, Preparation, and Organization

The most immediately useful thing a community can do for near term earthquakes is to plan and prepare to respond to and recover from an earthquake as quickly and effectively as possible, given the existing condition of the area. Plans and preparations should be in accordance with the provisions of the California Emergency Services Act as set forth in Article 10, Chapter 7, Division 1 of Title 2 of the Government Code.

Communities should have contingency plans which specifically include earthquakes. Many communities have existing contingency plans and procedures for disastrous fires, floods, or military emergencies. These should be augmented and modified to adequately apply to earthquakes.

Earthquake emergency plans should include provisions for the following:

An organization which:

a. Has assigned emergency functions to intrajurisdictional agencies to perform field operations;

b. Has personnel designated and trained to perform specific tasks both within the control center and the damaged areas;
c. Controls and coordinates field operations from a pre-designated, earthquake-resistant control center;
d. Has communications to all operating field forces and with higher and lower levels of government, to exchange operational information;
e. Has a staff to prepare and disseminate essential public information through the local news media; and
f. Conducts exercises to perfect and test plans and procedures.

Pre-earthquake Preparations

a. The most vulnerable structures within the jurisdiction with relationship to their effect on emergency operations should be listed.
b. Available essential resources should be identified and inventoried.
c. Procedures for obtaining mutual aid should be established.
d. Continuity of emergency communication system, including augmentation of operating agency radio communications with Radio Amateur Communications Emergency Services or other organized volunteer emergency radio capability should be ensured.

Post-earthquake Operations

a. Rapid surveillance and assessment of the damaged areas should be provided.
b. People trapped in damaged structures or isolated danger areas should be searched out and rescued.

c. Medical facilities should be constructed.
d. Necessary fire prevention, firefighting and lifesaving services in devastated or threatened areas should be provided.
e. Debris from transportation routes into damaged areas should be cleared.
f. People should be evacuated or directed from danger areas to locations providing relative safety, shelter, and sustenance.
g. Traffic supervision and control along established evacuation routes and security for evacuated areas should be provided.
h. Displaced people should be cared for.
i. The dead should be removed, identified and preserved for future disposal.
j. Provision should be made for reuniting families.
k. Provision should be made for informing victims' relatives outside the area.
l. Hardship should be relieved and rapid and orderly reconstruction and redevelopment should be expedited.
m. Essential public information through the news media should be prepared and disseminated.
n. A log of operations should be prepared and maintained.
o. A procedure for cooperating with qualified earthquake investigators should be developed.

CONSIDERATION OF EXISTING STRUCTURAL HAZARDS

Most of the buildings in El Centro were built over 25 years ago, making the city's building stock relatively old. However, El Centro has followed their Uniform Building Code which has contained seismic design standards since 1930, and the majority of structures, including all of the schools, are considered to be sound.

Any structure built prior to the adoption of this code could be a major source of hazards. Structural deficiencies are walls constructed of unreinforced masonry, unstable parapets, cornices, and appendages. Wood-frame, single story, residential structures have proved historically to be relatively earthquake resistant when not constructed over a fault trace. However, no building is earthquake-proof.

The objective of this section is to provide for the orderly abatement of those structural hazards which might still exist within the community. This should be consistent with the degree of earthquake risk the community is willing to accept, as expressed in the policy statement.

There are certain structures over which the community has direct control and others which are under the control of the State and Federal Government (public works projects).

Structures Not Under Direct Community Control

These structures fall into a number of categories of relative hazard:

a. The most useful is age: using the date of

May 26, 1933 (effective date of the Riley Act) as a division point.

b. Identification of unsafe non-structural elements must be based on inspection (either plans or in the field).

c. The presence or absence of dangerous non-structural elements (such as parapets, cornices, elevator counterweights, etc.) attached to the building in such a manner as to create a hazard to occupants or passersby.

One and two-family dwellings or farm buildings need not be considered here. For other buildings the order of priority for remedial action should be based on the type of occupancy and physical condition and location. For example, an old masonry hospital situated on or adjacent to an active fault would have the highest priority; a warehouse separated from passersby by open space might have the lowest priority.

Dangerous Buildings Ordinance

Each community should have a dangerous buildings ordinance in addition to its building code ordinance (which covers new construction) to deal with existing structural hazards (including non-structural elements). The community should consider adoption of an ordinance similar to the 1970 edition of the Dangerous Buildings Code (published by International Council of Building Officials as Volume IV of the Uniform Building Code) modified to specifically treat earthquake risk.

Because of the potential social and economic impact of meeting the safety standards established

by the ordinance, it is important to realize that the standards may not all be immediately enforceable. Therefore, for compliance with its standards, the ordinance should contain a timetable.

Inform Public

Consideration should be given to informing the public of potential structural seismic hazards by requiring that all older, potentially dangerous structures be posted with signs indicating that their seismic safety is questionable. These structures should be examined to determine whether they meet community standards or must be rehabilitated or demolished.

Redevelopment

It is further suggested that the seismic safety condition of existing structures be a major factor in selection of urban areas of redevelopment.

SEISMIC DETERMINANTS OF LAND USE POLICY

This section is concerned with the reduction of seismic risk to future development, having particularly great long-term significance to the total community. The analysis and standards developed in those sections dealing with structural hazards and natural seismic hazards should be used here to identify levels of risk by area and develop land use standards for each such area. A seismic safety map should then be developed.

The full range of urban land uses proposed in an area needs to be evaluated with respect to the level of hazard to which such uses can be subjected. Risk factors need to be established for specific types of seismic hazards and combined in an overall risk rating system, if possible.

Consideration should be given to potential seismic hazard lands of statewide significance and critical concern as indicated in the California Environmental Goals and Policy Report (Office of Planning and Research, March, 1972).

Identification of Level of Risk

This should be done by area through inventory and the appraisal of:

a. Geologic conditions

b. Structural conditions

c. Location and characteristics of essential facilities (determined by local jurisdiction, but should include emergency operations centers, hospitals, utilities, fire and police

stations and transportation systems).

d. Location of community facilities including other high occupancy structures such as schools, theaters, and public and semi-public buildings.

e. Dams, levees, and floodable areas.

Maps should be prepared of the above items where appropriate.

Development of Land Use Conditions by Risk Areas

This will involve determining what uses are acceptable under what conditions in each risk area. Separate standards should be established for different uses, such as:

a. Housing types
b. Commercial uses
c. Industrial uses
d. Open space categories
e. Community facilities
f. Essential facilities

Seismic Safety Map

The policy recommendation resulting from the geologic and land use studies should be translated graphically to a single map or diagram, if possible, which should show appropriate conditions for different types of development and indicate the relative seismic hazards throughout the jurisdiction.

Appropriate Revisions

Recommendations for appropriate revisions should be made to:

a. The General Plan including housing, conservation, utilities, and land use elements;

b. The development of regulations including:

    1. Zoning ordinance
    2. Subdivision and grading ordinances
    3. Building codes;

c. Redevelopment proposals; and

d. Capital improvement program.

Public and Semi-Public Works Conformance to Seismic Safety Element

Utilization of review procedures by local jurisdiction of public and semi-public works proposals to assure conformance to the seismic safety element, including:

a. Highway and transportation plans;

b. School construction plans;

c. Hospital plans; and

d. Utilities

While not mandated by legislation, the community may wish to use preparation of the seismic element as an opportunity to consider other geologic hazards and include them in broader geologic land use determinants, such as potential mudslide (without an earthquake, potential flood, etc.)

PROVISION FOR PERIODIC UPDATE

Rapid developments are taking place in the fields of geology, seismology and earthquake engineering. The fields of planning and emergency response techniques and practices are also advancing at a rapid pace. Laws relating directly or indirectly to earthquakes change periodically. It is therefore advisable to consider the above in annual reviews of the general plan as provided for in State planning law.

SAFETY

SAFETY ELEMENT

AUTHORITY

Legislation at the State level requires that each City's General Plan develop a Safety Element for the protection of the community from fires, geologic hazards, man-made or natural disasters, provide water, sanitary facilities, evacuation routes, clearance around structures and open space or park areas for the sheltering of the affected members of the community in the event of such disasters.

GOALS

The City must recognize that certain hazards exist in ordinary day to day living and thereby establish and recognize reasonable enforcement of land use, building, subdivisions, controls enabling the community to provide space around buildings, streets with sufficient width to accommodate daily travel and to serve as emergency routes for any disaster that could occur.

The community must establish within its regulations a level of acceptable risk particularly where public buildings are involved or major assemblies of people happen.

The community must recognize existing hazardous conditions in the older areas and even in the newer areas particularly where water in large quantities is transported to serve adjacent and important agricultural needs.

DEFINITION OF RISKS

Acceptable Risk: The level of risk below which no specific action by local government is deemed to be necessary.

Unacceptable Risk: Level of risk above which specific action by government is deemed to be necessary to protect life and property.

Avoidable Risk: Risk not necessary to take because individual or public goals can be achieved at the same or less total "cost" by other means without taking the risk.

METHODS

The community must maintain to the best level of its ability:

1. A potable water system.
2. Water pollution control through its waste treatment and storm water runoff.
3. An effective 24 hour a day police and fire facility coordinated for any emergency.
4. A continuing street repair, landscape arrangement and signing system to effect safe day to day travel and provide routes of evacuation using combined graphic and worded legends allowing anyone in the community an opportunity to know where he is going and how to behave himself on the route.
5. A community lighting system allowing a level of illumination that would deter crime or aid in the apprehension of crime or wrong doing.

CONSISTENCY WITH GENERAL PLAN

The Safety Element must complement other elements within the General Plan:

A. It should address itself to reducing social costs due to injury, loss of life in any emergency, therein establishing a sense of community well being and security.

B. Address itself to reducing costs of direct property loss or dislocation as a result of natural or man-made hazards or disasters and preserving natural environments.

C. Encourage joint planning with neighboring jurisdictions for mutual aid not only in emergencies, but in any element that effects the general safety and welfare.

IMPLEMENTATION

The Safety Element can only be implemented by "intermeshing" safety policies while administering or revising other elements of the General Plan:

1. All capital improvements be constructed with safe construction methods plus safe maintenance and use factors.
2. Review of major public and private developments by police and fire service to insure compatibility with safety objectives.
3. A continuing building and fire inspection program to identify hazardous conditions.
4. Maintain activity within local disaster organizations for emergency services.

SCENIC HIGHWAYS

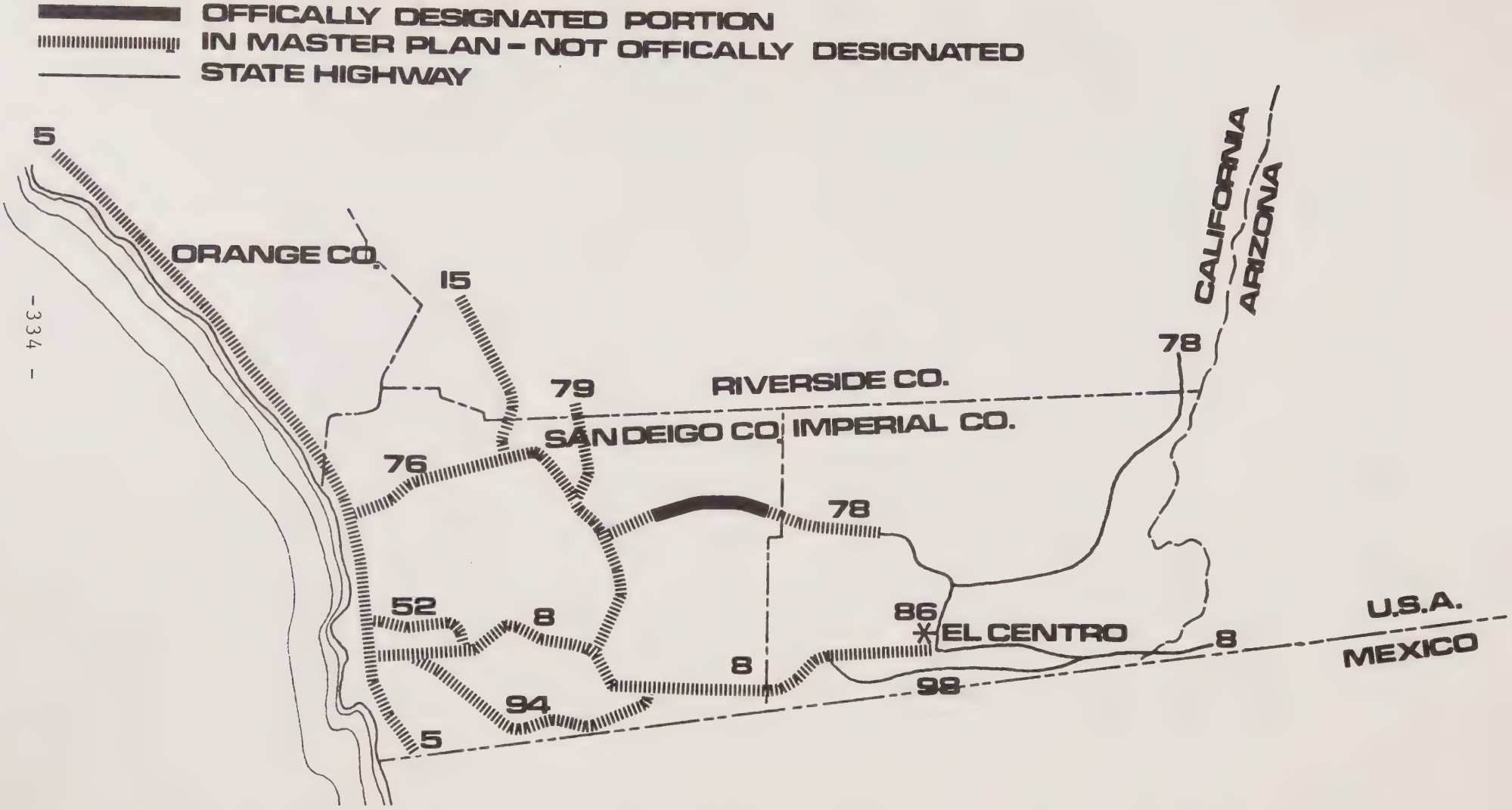
SCENIC HIGHWAYS ELEMENT

INTRODUCTION

None of the present Scenic Highway Routes on the State Scenic Highway System, either officially designated or in the Master Plan-Not Officially Designated directly affect the City of El Centro. However, it may be possible if the City and County were to join in the effort to establish the leg of State Route 8 from the present terminal just inside of Imperial County to the City of El Centro as an extension of the portion that is already in the designation. "In Master Plan-Not Officially Designated" classification, this entire arterial might become one of the most important of portals to the City. In order for this to be considered by the State, a number of actions must be taken as set forth in the "Guides" provided by the State Division of Highways.

The provisions of the "Guides" include the excerpts which indicate the approach that should be taken by the City and County if they determine that this important route be designated as a Scenic Highway and that as the Freeway to San Diego, it be developed to the "Scenic Highway" standards. These provisions form the appendix to this element of the General Plan.

At present, the City of El Centro has provided for a wide landscaped area on the southerly side of State Route 8 freeway which lies in the southerly portion of the city. The landscaping of this area and the careful regulation of the northerly edge will place the City in an advanced position to request that the County adopt equivalent policies on controls and improvements that will assure the highest quality of development in the areas adjacent to this route.



CALIFORNIA SCENIC HIGHWAY SYSTEM

Other City Arterials as Scenic Routes

Several other routes within the City should be treated as local Scenic Highways, mainly through the control of outdoor advertising and the landscaping of the median strips and edges. These routes would include Imperial Highway, Adams Avenue-4th Street and 8th Street. The improvement in the appearance of these streets through a program intended to beautify the approachways to the central area and the several residential districts would stabilize the value of all property in the City and reflect in sense of pride that all residents may enjoy by living in a community that cares about its visual impact on all who visit or are a part of its permanent population.

MEDIAN PLANTING RECOMMENDATIONS

7901.1 Categories of Planting

There are three categories of planting:

(a) Partial Planting - Trees -- The primary purpose is aesthetic improvement in undeveloped areas where a higher type of planting is not justified and to preserve the naturalistic appearance by replacement of trees removed by construction.

(b) Partial Planting - Functional -- The primary purpose is erosion control, traffic safety, reduction of fire hazard or screening traffic from adjacent property, the aesthetic effect derived being of secondary benefit.

(c) Full Planting -- The primary purpose is aesthetic improvement of the right of way and the preservation of property values of adjacent development, the functional benefits thereby obtained being secondary.

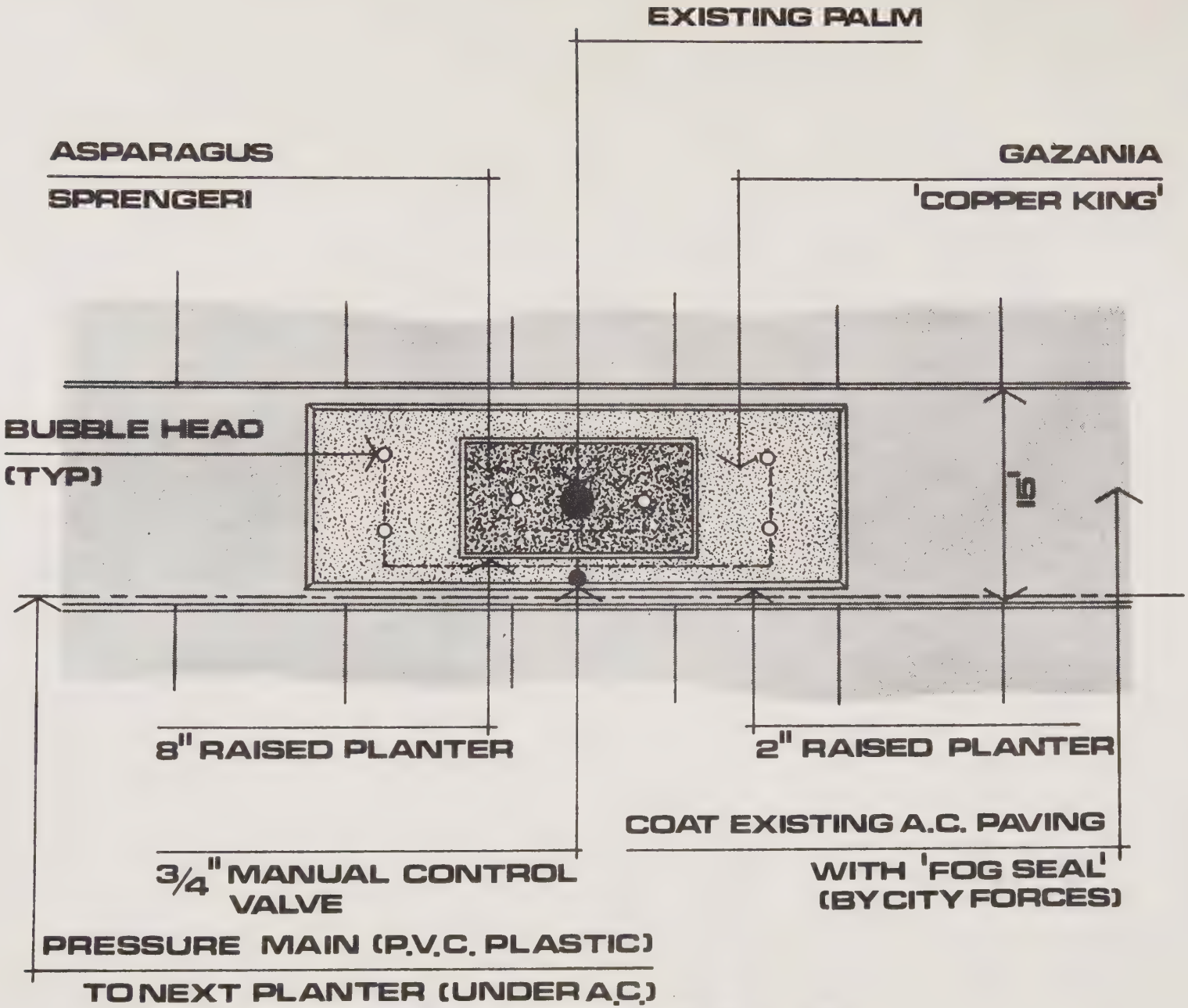
It is imperative that each project or portion thereof be classified correctly so that the Outdoor Advertising Act and applicable policies may be properly applied.

PLANT MATERIAL LIST

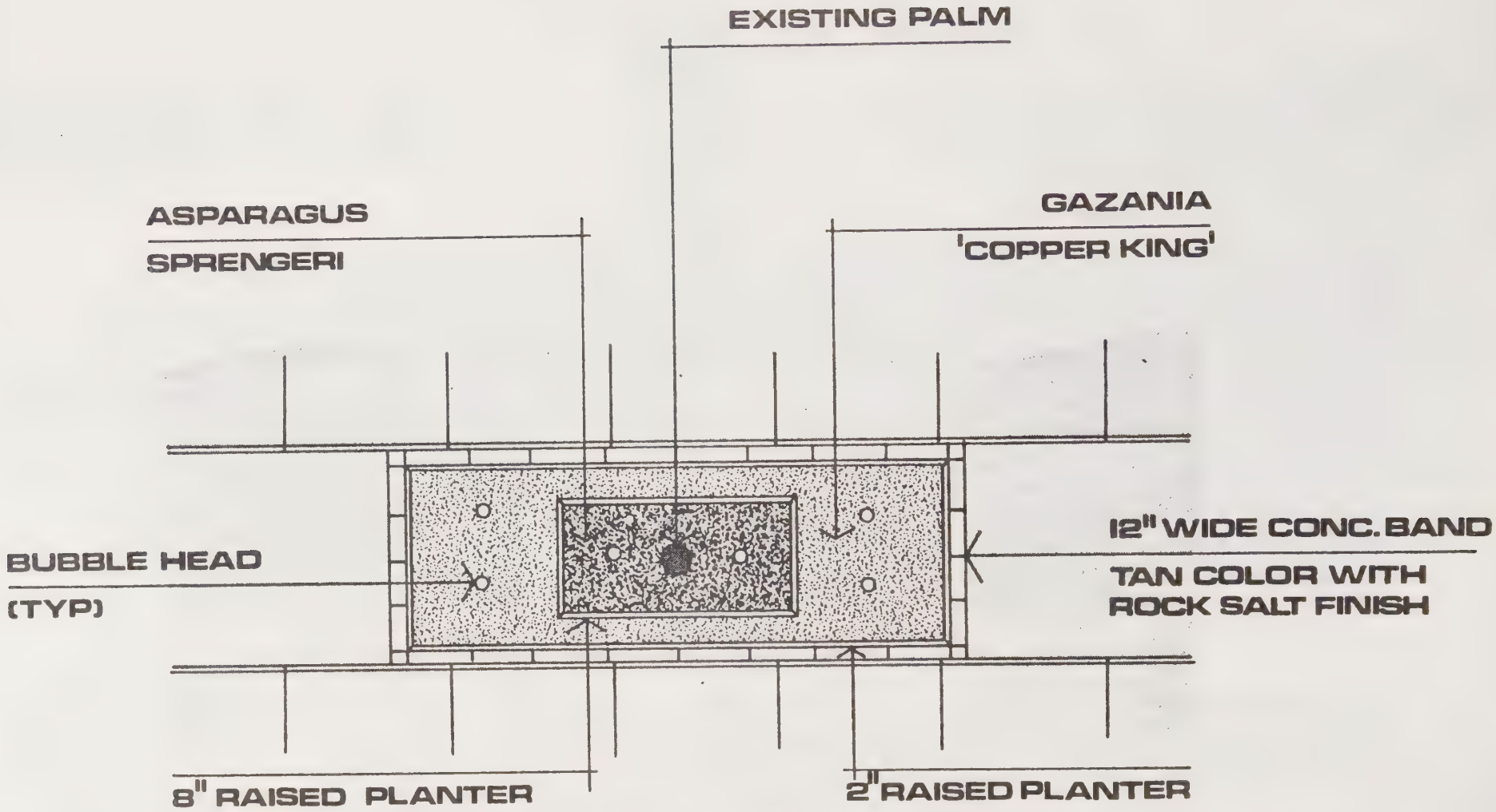
BOTANICAL NAME COMMON NAME		REMARKS
Asparagus Sprengen "Asparagus Fern"	18" Ht. Plant 18" Apart	Bright Green Foliage; Mounding
Arctotheca Calendula "Yellow African Daisy"	12" Ht. Plant 12" Apart	Bright Yellow Flowers
Gazania 'Copper King' "South African Daisy"	8" Ht. Plant 12" Apart	Bright Orange Flowers

Soil Amendment - Add 3" Redwood compost or nitrolized Fir bark and mix into top 8" of soil.

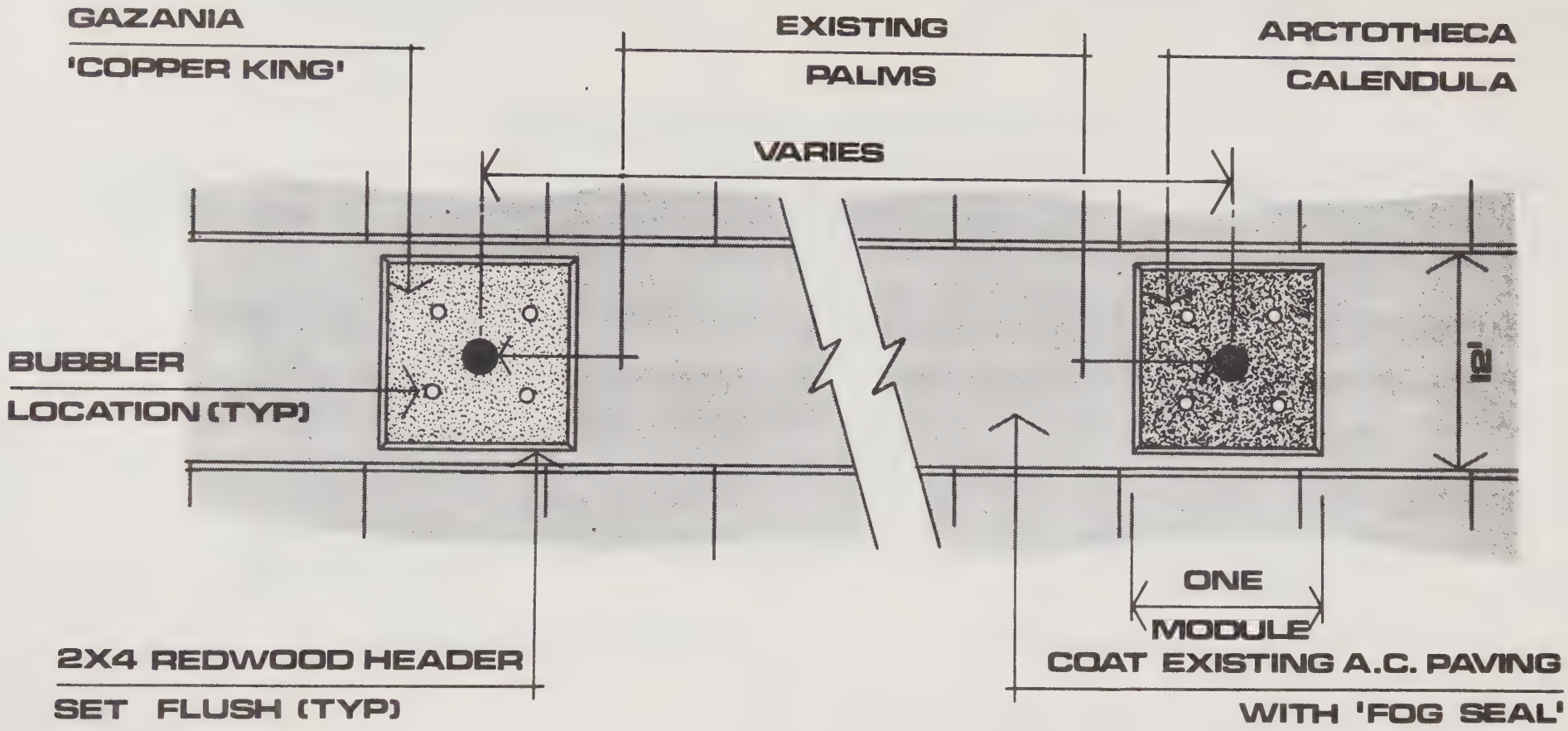
Fertilizer - Add 15 Lbs./1000 Sq. Ft. complete fertilizer (14-14-7 or equal) and mix thoroughly into top 8" of soil.



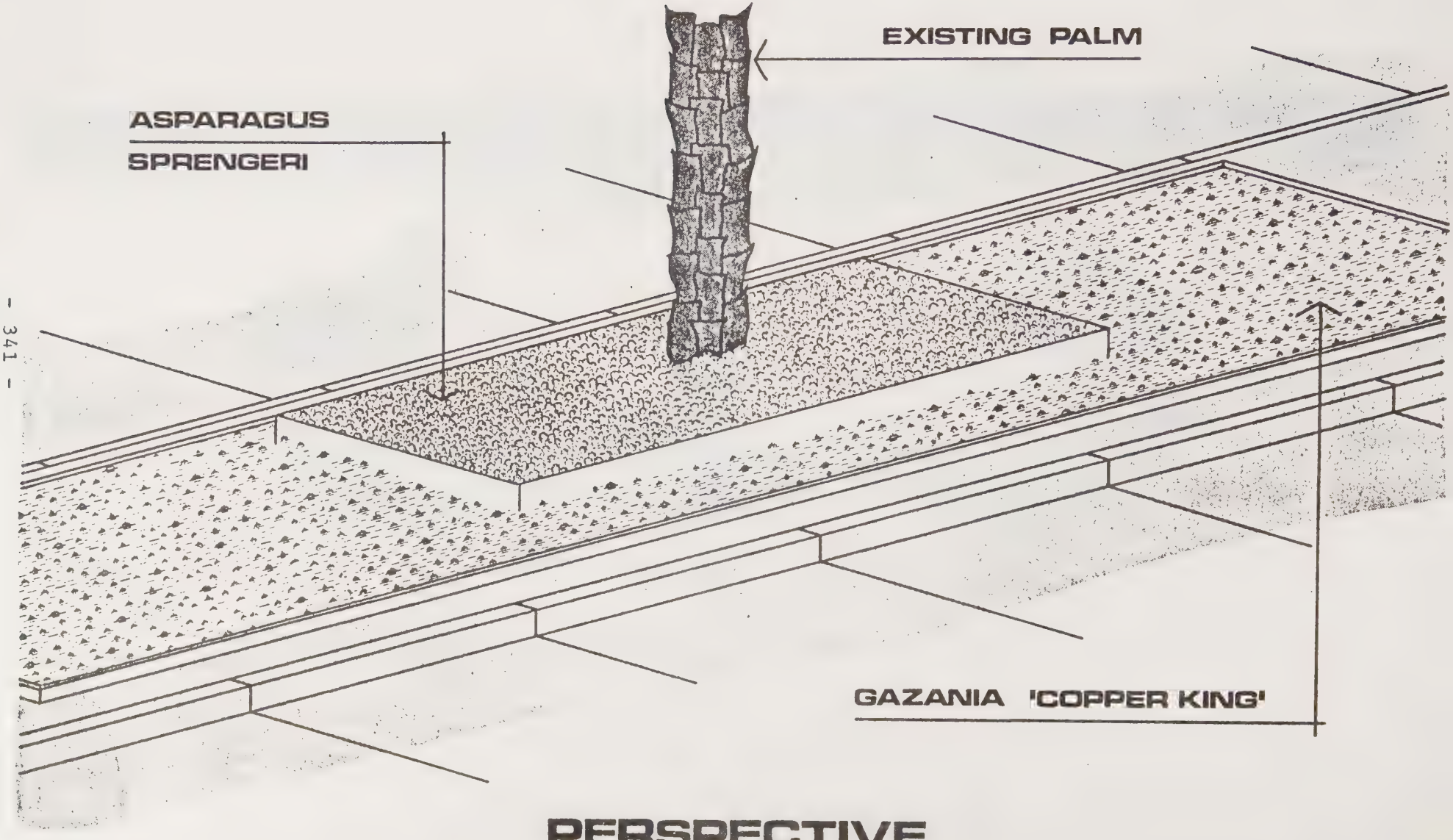
TYPICAL PLAN A



TYPICAL PLAN B



TYPICAL PLAN C



PERSPECTIVE

ELEVATION



TYPICAL SECTION

AUTHORITY

Section 65302

(h) A Scenic Highway Element for the development, establishment, and protection of scenic highways pursuant to provisions of Article 2.5 (concerning with Section 260) of Chapter 1 of Division 1 of the Streets and Highways Code.

Article 2.5

THE MASTER PLAN FOR STATE SCENIC HIGHWAYS

260. It is the intent of the Legislature in designating certain portions of the State Highway System as State Scenic Highways to establish the State's responsibility for the protection and enhancement of California's natural scenic beauty by identifying those portions of the State Highway System which, together with the adjacent scenic corridors, require special scenic conservation treatment. It is further declared to be the intent of the Legislature in designating such scenic highways to assign responsibility for the development of such scenic highways and for the establishment and application of specific planning and design standards and procedures appropriate thereto and to indicate, in broad statement terms, the location and extent of routes and areas requiring continuing and careful coordination of planning, design, construction, and regulation of land use and development, by State and local agencies as appropriate, to protect the social and economic values provided by the State's scenic resources.

261. The department shall, with the advice of the Advisory Committee on a Master Plan for Scenic Highways, establish and apply pertinent planning and design standards for development of official scenic highways.

In establishing and applying such standards for, and undertaking the development of, official scenic highways, the department shall take into consideration the concept of the "complete highway", which is a highway which incorporates not only safety, utility, and economy, but also beauty. The department shall also take into consideration in establishing such standards that, in a "complete highway", pleasing appearance is a consideration in the planning and design process. In the development of official scenic highways, the department shall give special attention both to the impact of the highway on the landscape and to the highways visual appearance. The standards for official scenic highways shall also require that local governmental agencies have taken such action as may be necessary to protect the scenic appearance of the scenic corridor, the band of land generally adjacent to the highway right-of-way, including, but not limited to (1) regulation of land use and intensity (density) of development; (2) control of outdoor advertising; (3) careful attention to and control of earthmoving and landscaping; and (4) the design and appearance of structures and equipment.

262. Whenever the department determines that the corridor protection program for any State highway in the State Scenic Highways System established by this article has been implemented by local governmental agencies and a plan and program

has been developed by the department for bringing such highways up to the standards for official scenic highways established by the department, including the concept of the "complete highway", as described in Section 261, the department shall designate the highway as an official State Scenic Highway and shall so indicate the highway in any publications of the department or in any maps which are issued by the department to the public.

The department shall cause appropriate signs to be placed and maintained along the portions of the State Scenic Highway System which the department has designated as official State Scenic Highways.

If at any time the department, with the advice of the Advisory Committee on a Master Plan for Scenic Highways, determines that the corridor protection program of local governmental agencies with respect to any highway which has been designated as an official State Scenic Highway no longer adequately carries out responsibility of the local governmental agencies for the protection of the scenic corridor, it may revoke the designation of the highway as an official State Scenic Highway and remove the signs which so indicate the highway.

GENERAL PLAN POLICY*

"As a minimum, the local government should have adopted a General Plan as defined in the State Planning Laws (Title 7 of the Government Code) for the jurisdiction traversed by the route. The Plan should relate to the State's Master Plan of Scenic Highways and should contain the local jurisdiction's policies of environmental protection."

"The General Plan (map) for the City or County should identify the highways or roads eligible for designation as official State or County Scenic Highways.
The General Plan (report) text should formulate the local policies and standards for the local Scenic Highway Program."
[4.2]

SPECIFIC PLAN*

"The local jurisdiction should adopt a specific plan for Scenic Highway corridors under the authority of Planning Law of Title 7 of the California Government Code (Appendix II). The Plan should include the maps and measures for implementing the program for the specific Scenic Highways."
[5.2.2]

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*THE SCENIC ROUTE. A Guide for the Official Designation of Eligible Scenic Highways.
State of California, Department of Public Works.

PROGRAM ENACTMENT*

"The scenic corridor boundaries and the local Scenic Highway Plan and Program, identifying the land use regulation measures to be utilized within the corridor, shall be adopted by the local Planning Commission and Legislative Body."

"In many instances, the local jurisdiction has previously adopted the measures necessary to implement its Scenic Highway Plan. In such cases only the Plan, Program and Corridor Boundaries need be adopted. In others, the local jurisdiction will be required to prepare the plan and implementation measures and may wish to submit its preliminary proposal to the Advisory Committee, prior to the required adoption, for the Committee's review and recommendation."
[2.4.1]

APPLICATION FOR DESIGNATION*

"Upon adoption of the plan and program of implementation measures, the local jurisdiction shall make an application to the Division of Highways District Engineer for official designation. The application should be in the form of a written communication containing a brief descriptive report of the adopted measures or policies for plan implementation together with a zone map of this corridor area."

"The application, District Scenic Highway Report, and the Local Plan and Program will be processed in accordance with the procedures described under Section 2.3."
[2.4.2]

*Ibid

DEPARTMENT OF PUBLIC WORKS*

"The Director shall inform the local jurisdiction and the Division of Highways of his determination of the qualification of the proposal for the Official Scenic Highway Plan and Program as outlined in their proposal. He will, with the advice of the Advisory Committee, designate the route to be an official State Scenic Highway. County roads are declared official County Scenic Highways by the County Board of Supervisors when authorized to do so by the State Director of Public Works." [2.3.4]

DEFINITION OF TERMS*

LAND USE REGULATIONS*

"Land Use Regulations consistent with policies of the General Plan should be in effect over the entire corridor."
[4.3.1]

BUILDING HEIGHTS AND SETBACKS*

"Heights and setbacks of structures should be regulated so as not to obstruct important views. A variety of standards may be applied in order to achieve this purpose under different conditions." [4.3.2]

SCREENING*

"Existing or indispensable offensive land uses should be screened from view from the highway, or inconspicuously located if within a scenic corridor. Effective screening can be accomplished

*Ibid

by proper use of planting, grading, or fencing." [4.3.3]

ON PREMISE ADVERTISING*

"The size, height, number, and type of on-premise signs allowed should be the minimum necessary for identification. The design, materials, color, texture, and/or location should relate to their surrounding physical environment."

OFF PREMISE ADVERTISING*

"No off-premise outdoor advertising shall be permitted. Provision should be made for eventual elimination of existing and non-conforming structures."

"Information panels for advance notice to the motorists may be provided in public or commercial information sites appropriately designated. Any local innovative proposal or information panel designed for off-premise outdoor advertising, to be located within a scenic corridor should be submitted to, and approved by, the Advisory Committee."

See Section 4.10.3, SIGNS AND OUTDOOR ADVERTISING IN URBAN AREAS.
[4.4.2]

STRUCTURES*

"As in above, structures need not be a controlling factor in establishing corridor boundaries." [3.2.3]

*Ibid

DISTANT VISABILITY*

"Where distant horizons or vast panoramas are visible from the highway, a corridor boundary closer than the visual range may be selected on criteria other than visibility. Any aesthetic standards which are enforced as part of a local Scenic Highway Program should be realistically limited to land having the greatest visual impact from the highway. In some cases, a distant, noncontiguous area may be included in the corridor, and a less critical closer area may be excluded."
[3.2.4]

NATURAL AND MAN-MADE FEATURES

"Outstanding features, whether natural, such as water, timber, or geological formation, or man-made, such as public works or structures of architectural, historic, or civic value, should normally be included in the corridor together with their surrounding area."
[3.3.1]

LANDSCAPE CHARACTER*

"All types of landscape, whether wild, cultivated or urban, may have scenic values and should be considered for inclusion in the corridor. The Scenic Highways appearing in the system were selected in part to provide motorists with a diversity of experiences related to the various landscape provinces of California, their climates, and seasonal variations. In existing urban landscapes, density of development may call for narrower corridors."
[3.3.2]

*Ibid

ECOLOGICAL AREAS*

"The integrity of an ecological unity, and the flora and fauna constituting its scenic value, should be preserved by including all of it in the corridor wherever feasible, regardless of the visibility factor. Encroachment or other such damage to an ecological unit should be avoided."
[3.3.3]

VISUAL IMPACT*

"The visual impact of a feature or an area may be evaluated in terms of its uniqueness, its size, the scale of its details, boldness of form, vividness of color and other specific characteristics in relation to its distance from the viewer and the duration of the visual experience. The degree of this impact is a factor in the inclusion of a feature for an area in the corridor."
[3.3.4]

PROBABLE METHODS OF PROTECTION*

"The likelihood that certain areas will be protected by such means as acquisition for public park or open spaces, flood plain zoning or low density zoning, may influence the limits of the corridor. This underscores the need for the local governmental unit to study specific implementation methods concurrently in a cooperative study to locate the corridor boundaries."
[3.4.1]

*Ibid

LEGAL BOUNDARIES*

"The precise boundaries of the corridor, since they are to be used for administrative purposes, may coincide wherever possible with property lines, zoning district boundaries, City limits, or other legal delineations."
[3.4.2]

ARBITRARY DELINEATION*

"In the absence of criteria such as those listed in this chapter, or because of other factors of noncontrolling nature, a constant line, arbitrarily selected, may be used for the corridor boundary. At any rate, innovative techniques plus other factors not included, that will assist in the determination, should be tried."

LOCAL INTERPRETATION OF SCENIC HIGHWAY GUIDELINES

The Scenic Highway Guidelines are to be interpreted in at least two ways:

1. In classifying routes that are to be proposed as a part of the Statewide system.

2. In classifying routes that are to be a part of the local Scenic Highway System which would include special features in the Circulation Element such as entry ways, park drives, and similar important landscaped and beautified arterials.

*Ibid

Both portions of the Scenic Highway Element are a part of the General Plan, and the criteria (other than the continuity that is associated with the Statewide Plan) should be observed in the selection and implemented in the development and maintenance.

CORRIDOR PROTECTION*

"Before a highway shown on the State's Master Plan of Scenic Highways can qualify for designation as an "Official Scenic Highway", the local jurisdiction and the public agencies managing land within the corridor shall have adopted a plan and program or policies that will result in the protection and enhancement of scenic resources within the corridor. In evaluating application qualifications, the Director of Public Works shall receive the recommendations of the Advisory Committee. It shall base its recommendations on the extent to which the standards described in this chapter are part of a protection program. These standards are not all applicable to any one corridor, but suggest a wide array of protection measures that could be utilized. Others not mentioned here may well be considered in order to accomplish the purposes of the program. This chapter will serve as a guide for the local jurisdiction or other public agencies managing land within the corridor."
[4.0]

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*Ibid

SCENIC HIGHWAYS AND THE GENERAL PLAN

Since a prerequisite to the identification and improvement of a Scenic Highway requires that it be part of the General Plan for the Community within which it is located, said Scenic Highway should be a special symbol identified on the General Plan Map and policies should be adopted as part of the Plan which established in the text the criteria for development and maintenance.

COUNTY SCENIC HIGHWAYS*

"County roads may be designated as official County Scenic Highways by the County Board of Supervisors after the State Director of Public Works has found that all necessary requirements have been met. All standards and procedures prescribed in this guide for State Scenic Highways shall apply equally to County Scenic Highways. The Division of Highways will not, in this case, undertake a Scenic Highway Study, but will be available upon request to consult with the local jurisdiction regarding the technical aspects of this program." [2.5.1]

STATE HIGHWAYS*

"Only the State Legislature may amend the State's Master Plan of Highways eligible for Official Scenic Highway designation. Local jurisdictions are advised to adopt meaningful policies and measures for the protection and enhancement of all areas where the visual environment is threatened, whether or not the areas are within view of State Scenic Highways." [2.5.2]

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*Ibid

THE SCENIC HIGHWAY AND ITS ENVIRONMENT

The scenic highway should reflect the environment through which it passes and should consititute a major element in the improvement and maintenance of that environment. There are many portions of the circulation system that constitute portals to a community at which points the character and quality of the entire area are determined in the eyes of the arterial users. These critical routes, be they rail, stream or arterial highway, should be considered as potentially scenic highways.

SCENIC HIGHWAYS AND STATE AND LOCAL AGENCIES

The responsibility for development and maintenance will be determined by the system within which the scenic highway belongs. Cities and Counties will be required to protect the elements that are part of their systems and the State participates in maintaining the routes that are part of the State System.

Public acceptance and commitment to a complete community development program sponsored by the local government will determine, in the long run, the success of a Scenic Highway Program more than any single protective measure.

A City or County General Plan, Zoning Ordinance, Subdivision Regulations, Building and Housing Codes, Fire Code, and Capital Improvement Program are the principal administrative tools of community development. Properly coordinated, they form readily usable frameworks for a variety of corridor protection and enhancement measures.

OFFICIAL DESIGNATION*

"Upon receipt of the findings and recommendations of the Advisory Committee, the Director of Public Works may make his own review."

"He then shall designate the highway as an Official State Scenic Highway and notify the Advisory Committee and local jurisdiction of the action."

"The designated route may then be indicated as an Official Scenic Highway on any map or other publications, and the highway will be properly signed as such."
[2.4.3]

ENFORCEMENT*

"The measures adopted by the local jurisdiction for the protection of the corridor, as identified in the Local Plan and Program, shall be effectively maintained, upgraded, and enforced by the local jurisdiction in order to retain official designation."

"The local jurisdiction shall report in writing to the Division of Highways District Engineer on an annual basis on the maintenance or any modification to its plan and program of implementation measures, as approved upon official designation."

"The Department of Public Works shall report to the Advisory Committee, through the Interdepartmental Committee, on an annual basis on this status."
[2.4.4]

*Ibid

THE PUBLIC INTEREST IN THE SCENIC HIGHWAY ELEMENT

As an important portion of the General Plan, all of the public hearings held or required by State and local law are to be complied with. In addition there would be meetings with local interest groups that have a special concern for Community appearance and beautification, local roadside councils and other groups with an interest in this portion of the General Plan.

CITIZENS' ACTION*

"Dominating the spectrum of measures to implement the Scenic Highway Program, the awareness, understanding, and contributions of the public, and the resultant communications are the principal keys to its success."

"A Citizens' Group at the local level, similar to the California Roadside Council at the State level, should help create this awareness and spark citizen action with the assistance of other community organizations."

"This action could take various forms: To induce merchants, landlords, homeowners, and others to participate in a cleanup-paintup campaign; to raise the level of general maintenance of public and private properties; to promote the Scenic Highway Program through posters, articles, and speeches."

"The local governing body should encourage and, when appropriate, materially assist citizen participation in the program. It should appoint a Citizens' Committee Advisory to the governing

*Ibid

body for the program. Information regarding the Scenic Highway Program should be disseminated to the public by the local jurisdiction."

SCENIC HIGHWAY ELEMENT GUIDE*

The following criteria should be primary in relation to the adoption of a potential system of eligible scenic highways.

1. The scenic corridor through which the highway passes should have consistent scenic, historic, or aesthetic value during all seasons.

2. Consideration should be given those highways or routes which are:

   a. State of jurisdictional entry routes. (Portals)

   b. Predominantly utilized for recreation or vacation travel.

   c. Utilized for one-day sightseeing, or study trips.

   d. A part of an integrated, or semi-integrated scenic route system that traverses varied scenic corridors for longer trips.

   e. Through areas of extraordinary scenic value.

   f. Typical or demonstrative of varied scenic factors available within the jurisdiction.

3. If possible, all principal landscape and topographical type areas should be represented in the system.

*Extracted from "The Scenic Route"

4. Routes of historic significance which connect places of interest should be considered even though the route is of marginal scenic value.

It is suggested that jurisdictions including Scenic Highways in their General Plans adopt these or similar standards.

1. The establishment of general alignment and grade to fit the scenic character of the area to be traversed.

   a. Curvilinear alignments should be stressed.

   b. The highway should fit the topography.

2. The reduction to a minimum of all roadway cut and fill scars.

   a. Elimination of cuts of fills wherever possible. This may be accomplished through the use of tunnels and/or bridges when necessary.

   b. Flatten or contour all grades and landscape slopes where they cannot be eliminated.

   c. Acquisition of wider rights of way or scenic easements should be encouraged.

      1. Access control is necessary.

      2. The elimination of outdoor advertising and unsightly development through zoning should be required.

   d. The provision of vegetation screens for the purpose of hiding objectionable views.

e. Selective clearing of vegetation to open up or provide views of desirable scenic qualities.

f. The location of and/or design of structures with an intent to achieve beauty or aesthetic qualities.

g. The provision of erosion control standards.

h. The provision of roadside parking areas and lookouts wherever scenic vistas are warranted.

EFFECTUATION OF THE SCENIC HIGHWAY ELEMENT

"The most important factor in the implementation of a Scenic Highway Program is the effective administration of the Corridor Protection Plan of a local jurisdiction. The adoption of reasonable standards most appropriate to the local jurisdiction to carry out the intent of the Local Plan and Program in a given corridor, and the enforcement of their application upon all lands within the corridor, through the regulatory power of all local jurisdictions is the key consideration."

"A wide range of measures is available to carry out the protection of the corridor. Though the concept of protecting the scenery visible from a scenic route is not new, additional creative and innovative techniques should be tried, some of which may require new local policies, ordinances, or other regulations." [5.0]

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*Ibid

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